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Final Draft REPORT

Superfund Subcommittee *of the* National Advisory Council for Environmental Policy and Technology



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Subcommittee Members

**Raymond Loehr -
Chairman**
University of Texas at
Austin

William Adams
Kennecot Utah Copper
Corporation

Sue Briggum
Waste Management

Doris Cellarius
Sierra Club

Grant Cope
Earthjustice

James Derouin
Steptoe & Johnson

Richard Dewling
Dewling Associates, Inc.

Steve Elbert
BP America, Inc.

Jane Gardner
General Electric

Glen Hammer
Ashland, Inc.

Dolores Herrera
Albuquerque San Jose
Community Awareness
Council, Inc.

Robert Hickmott
Smith-Free Group

Aimee Houghton
Center for Public
Environmental Oversight

Ken Jock
St. Regis Mohawk Tribe

Frederick Kalisz
City of New Bedford

Gary King
State of Illinois

Ed Lorenz
Alma College

Mildred McClain
Harambee House, Inc.

Michael Mittelholzer
National Association of
Home Builders

Tom Newlon
Stoel Rives

Lindene Patton
Zurich North America

Victoria Peters
state of Colorado

Kate Probst
Resources for the Future

Ed Putnam
state of New Jersey

Catherine Sharp
state of Oklahoma

Alexandra Shultz
Mineral Policy Center

Mel Skaggs
InDepth Environmental
Associates

Richard Stewart
New York University
School of Law

Wilma Subra
Louisiana Environmental
Action Network

Michael Tilchin
CH2M Hill

Jason White
Cherokee Nation

Robin Wiener
Institute of Scrap
Recycling Industries

***EPA Ex-Officio
Representatives***

Barry Breen
U.S. Environmental
Protection Agency

Phyllis Harris
U.S. Environmental
Protection Agency

Lawrence Starfield
U.S. Environmental
Protection Agency

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Introduction from the Chair

Key issues to be addressed in the Chair's letter (FYI -- we are planning to address issues regarding the organization of the report etc. in the introduction to the report).

- Indicate that the primary audience for this report is EPA, but others who are interested in the issues addressed in the report may also find it to be useful including the Congress, other levels of government, tribes, OMB, representatives from environmental and citizen groups, industry, and the public.
- Repeat the summary of the charge (key 3 points) and emphasize that the Subcommittee focused its work in those three areas. Point out that during the course of the Subcommittee's deliberations, some additional related issues did arise and they are addressed in "chapter 6".
- Note the diversity of the membership of the Subcommittee as a strength of the report. The intent of the diverse membership was to include the views of the interests in society that are concerned with the implementation of the Superfund program. Thus, the statements, recommendations and differences of opinion in the report are indicative of such interests.
- Note the fact that EPA provided the charge, background information and ongoing guidance and that the Subcommittee considered that charge and made modifications that resulted in the final charge as it appears in the report (the June 2002 charge). Thus the Subcommittee views this report as an independent report to the Agency.
- The Subcommittee appreciates the detailed factual material provided by EPA, ATSDR, NIEHS, specific members of the Subcommittee and members of the public, especially those who provided public comments. However, the report is the product of the Subcommittee members only and is intended to provide advice and guidance to EPA. Individuals and organizations that provided information to the Subcommittee, including EPA personnel, did not participate in the decisions made by the Subcommittee regarding the final content of the report.

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- 1 • The material in the report results from detailed work group deliberations on
2 specific topics and interactive discussions in open public meetings. The report is
3 intended to be an accurate reflection of the deliberations and conclusions of the
4 Subcommittee. In some cases findings and recommendations represent the
5 consensus of all Subcommittee members and in other cases various options/points
6 of view are presented. The Subcommittee items of consensus and different points
7 of view, as well as possible options for consideration, are provided to indicate the
8 diversity of approaches that can be considered by the Agency in order to provide
9 adequate protection of human health and the environment at actual and potential
10 Superfund sites.
- 11 • A statement pointing out that the Subcommittee hopes that the Agency will find
12 the findings and recommendations to be of assistance and that the individual
13 members of the Subcommittee stand ready to assist the Agency in the
14 implementation of any recommendations in any appropriate ways.

Executive Summary

The Executive Summary will be written after the final report is drafted. In the Executive Summary we are planning to summarize the ideas presented in each section of the report. That summary will include a narrative description of the formal recommendations, implementing guidelines, and policy options addressed.

I. Background

In July 2001, the Deputy Administrator of the US Environmental Protection Agency (EPA) directed the development of an action plan to address the recommendations in the Resources for the Future (RFF) report to Congress, *Superfund's Future, What Will It Cost?* The plan called for the creation of a Superfund Subcommittee under the auspices of the National Advisory Council for Environmental Policy and Technology (NACEPT), an advisory committee under the Federal Advisory Committee Act (FACA).

The Superfund Subcommittee was chartered in June 2002. Members of the Subcommittee were appointed by EPA and are senior-level individuals from business and industry, community and environmental advocacy groups, federal, state, local and tribal governments, and environmental justice, other non-governmental organizations and academia. (See Appendix A for a list of Subcommittee members.)

The Charge to the Subcommittee

EPA asked the Subcommittee for advice in three areas.

- **Use of the National Priorities List (NPL)**, including the role of the NPL in the context of other cleanup programs, the types of sites that should be on the NPL, and who should be involved in determining the sites that are listed.
- **How to best address mega sites (defined as sites where total cleanup costs are expected to exceed \$50 million)**, including whether cost should continue to be the determining factor when identifying mega sites, whether there are viable alternatives for placing mega sites on the NPL and/or containing their costs, and whether there are unique aspects of mega sites that might require a different decision-making process for NPL listing.

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- 1 ▪ **Measuring progress in the Superfund program**, including the criteria that
2 should be used to measure progress, who should be involved in measuring
3 progress and defining success, measuring the long-term effectiveness of
4 institutional controls, containment and natural attenuation, and integrating long-
5 term stewardship into the goals of the Program.

6
7 Each of these areas is defined more fully in the final Charge agreed to by the
8 Subcommittee. The final Charge the Subcommittee used to guide its work resulted from
9 discussions by the Subcommittee in which the original charge presented by EPA was
10 modified and elaborated upon to reflect the views of the Subcommittee. The original
11 Charge and the modified Charge agreed to by the Subcommittee are included in
12 Appendix B.

13
14 The Subcommittee met nine times between June 2002 and March 2004. Their original
15 term from June 2002 to December 2003 was extended to March 31, 2004 by Marianne
16 Horinko at the request of some members of the Subcommittee. Between Subcommittee
17 meetings, small working groups of Subcommittee members met to continue deliberations
18 and develop options and recommendations for consideration by the full Subcommittee.
19 EPA ex officio Subcommittee members participated in discussions to offer insight into
20 Agency operations and policy and advice on the implementation implications of
21 recommendations under consideration. The Agency also supported Subcommittee
22 deliberations by making staff available to provide informational briefings and other
23 materials to the Subcommittee and by providing professional facilitators for
24 Subcommittee and work group meetings. EPA did not participate in the final decision-
25 making on Subcommittee recommendations.

26
27 In accordance with the requirements of FACA, notices of full Subcommittee meetings
28 were published in the Federal Register and the meetings were open to the public.

29 Opportunities for public comment were provided at each meeting and the content of the
30 public comments are included in the meeting transcripts. A description of the

31 Subcommittee process, including dates and locations of full Subcommittee meetings and

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1 lists of individuals who offered presentations to the Subcommittee or made comments, is
2 included in Appendix C. Meeting agendas, transcripts and other materials are available
3 through the Superfund Docket [docket contact information]; reference Docket #SFUND
4 2002-0005.

5
6 In developing this report, Subcommittee members considered and articulated their views
7 on many complex and inter-related issues. The final report is an integrated package that
8 represents the Subcommittee's best effort to formulate consensus recommendations. The
9 Subcommittee worked to reach the greatest degree of consensus possible among the wide
10 range of views reflected in its membership. Consensus was defined as an outcome that
11 everyone can "live with," in the context of the report as a whole, though aspects of any
12 particular finding or recommendation may not be the first choice of all members. When
13 consensus was not reached, the report identifies options or describes the range of views
14 held by Subcommittee members and or a range of policy options identified for the
15 Agency to consider.

16
17 The rest of this report is organized as follows. *[Additional narrative describing the*
18 *report organization will be inserted upon completion.]*

19
20 During the Subcommittee's deliberations a number of issues arose which were related to
21 the charge, but on which the Subcommittee did not have time to focus in-depth. There
22 several of these issues which the Subcommittee believes merit further attention by EPA.
23 These issues are discussed in Section VI.

24
25 **Differing Views on Funding Shaped Subcommittee Deliberations**

26
27 From the beginning of its deliberations, the Subcommittee recognized that its charter was,
28 at least in part, driven by the challenging budget realities facing the Superfund program
29 in recent years. This situation involves the increasing difference between the monetary
30 needs of the Superfund program as more sites are listed and at the same time more

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1 complex sites reach the expensive remedial action phase of cleanup and the fact that
2 decreasing resources have been made available to EPA for cleanup of sites. As part of
3 the initial briefings provided to the Subcommittee, EPA leadership explained that, even
4 with appropriations from the Superfund Trust fund augmented by annual appropriations
5 from general revenues, the amount of Superfund money available in recent years is not
6 adequate to fully fund progress at all fund-lead cleanups and start all new fund-lead
7 cleanups that have complete remedial designs and are ready for construction. In
8 addition, funds are insufficient to also carry out necessary activities to oversee PRP lead
9 sites and provide Superfund's other environmental services such as removal actions,
10 community outreach, and research and development. This situation raised many
11 concerns among Subcommittee members, in particular with respect to EPA's continued
12 ability to make adequate progress on NPL listed sites and the Agency's continued
13 willingness to list new sites. This concern was focused specifically on the challenges
14 posed by large or complex sites that have the potential to require significant investment
15 of Agency resources and take a very long time to reach completion. In addition, concerns
16 were expressed regarding the ability of the Superfund program to continue to play a
17 meaningful role in incentivizing and encouraging responsible parties to clean up sites
18 under state cleanup programs and other federal programs as a way to avoid an NPL
19 listing. A range of similar concerns has been expressed by other program evaluators and
20 overseers (see, e.g., [\[cite GAO report, RFF book\]](#)) and has been widely reported in the
21 trade and mainstream press.

22
23 In its discussions with the Subcommittee, EPA leadership emphasized that the Agency is
24 looking for advice on how to approach the difficult decisions it faces when choosing
25 which sites and risks to address with limited Superfund resources. The Agency asked
26 that in making recommendations, the Subcommittee assume as one of its future scenarios
27 that Superfund program funding would remain essentially level. Of course, as described
28 more fully in Section IV, a "level" funding scenario, in general, actually represents a
29 decrease in the amount of money available for fund-lead cleanups because EPA typically
30 covers its annual increases in operating costs (e.g., cost of living adjustments, increases in

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1 overhead) out of the extramural funds that are used for field activities and construction,
2 leading to a reduction in the available cleanup funds.

3
4 Some Subcommittee members resisted EPA's request that the Subcommittee assume
5 level funding as a future scenario. They saw accepting this assumption as an acceptance
6 of inadequate resources for the Superfund program. These Subcommittee members
7 believe that if the underlying problem creating concern over the number and types of sites
8 to list in the NPL is the status of the Superfund budget, the obvious solution is to
9 recommend increased appropriations to the program. Other Subcommittee members saw
10 EPA's request that they consider a level funding scenario a statement of the practical
11 realities of the budget process and were not troubled by the idea that the program would
12 have to "live" within a budget of approximately \$1.3 billion per year. These
13 Subcommittee members asserted that, at a minimum, EPA should increase the efficiency
14 of Superfund implementation by ensuring that a larger percentage of available funds are
15 spent for on-the-ground cleanups and ensure full use of other environmental remediation
16 programs (such as state programs) to compel and oversee cleanups before there is
17 consideration of an increase to the overall Superfund appropriation. The Subcommittee
18 members who had these views also expressed concern that EPA would direct any
19 increase in funding to program management and other activities, rather than for on-the-
20 ground cleanup activities and construction.

21
22 The Subcommittee's discussions about funding for the Superfund program were
23 complicated by some fundamental differences in perspective about the future funding
24 need for the program, appropriate funding sources, and spending priorities.

25
26 With respect to the funding need, the Subcommittee did not reach consensus on how
27 much additional money, if any, would be needed to "fully fund" the program.
28 Differences persisted despite the Subcommittee's review of the funding need scenarios
29 described by RFF in its 2001 report on program funding¹, and flowed, at least in part,

¹ [Cite](#)

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1 from disagreements about how to define funding needs. Some Subcommittee members
2 assert that the funding need should be defined as adequate funding to maintain new
3 listings as needed, support reasonable progress at all fund-lead sites currently listed, and
4 maintain a strong enforcement presence and potential to address unexpected clean up
5 needs so as to buttress the effectiveness of state environmental programs and other
6 federal programs. This likely would require an increase in the total Superfund budget.
7 Others believe that the program should be refocused on a more targeted set of priorities,
8 and thereby live within its current budget, or are reluctant to support increased funding
9 until the program has maximized efficiencies or until other issues (see discussion of risk,
10 below) are addressed.

11
12 Still others believe that the amount of increased funding needed to maintain new listings
13 as needed and fund reasonable progress at fund-lead sites can be achieved with a
14 reasonable, feasible increase in the Superfund budget devoted to construction at orphan
15 NPL sites and, therefore, does not warrant making significant changes to the numbers or
16 types of sites the Superfund program has historically addressed. Others disagree with the
17 foregoing position for various reasons, including:

- 18
19 ▪ An overlying belief that it would take a significant budget increase,
20 ▪ Concern that any budget increase is not appropriate until other environmental
21 remediation programs are fully utilized and / or efficiencies within the Superfund
22 program are fully identified and realized, or
23 ▪ Resolution is reached on the types of risks that should constitute true national
24 priorities. (See discussion of risk, below.)

25 These discussions were further complicated by the fact that EPA, of course, does not
26 control the amount of money or sources of funding that Congress chooses to use to define
27 the Superfund program, and making specific recommendations about funding amounts
28 and sources was outside the scope of the Subcommittee's charge.

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With respect to the funding sources, there is a range of views on the Subcommittee about how increased appropriations, if they are to be made, should be generated. Some support reinstating the Superfund taxes on corporations and chemicals and petroleum.² Others favor special appropriations from general revenues, either for the overall program or tied to specific sites.

Differing Views on Risk Shaped Subcommittee Deliberations

The Subcommittee's disagreements about funding may be due in part to the disparity of views about the types of risks that the Superfund program should address. A number of Subcommittee members believe that the fundamental problem causing concern over the number and types of sites to list on the NPL is related to risk. These Subcommittee members believe the primary solution is to refocus the Superfund program on sites or portions of sites that pose current significant risks to humans or sensitive environments and where there are not viable, potentially responsible parties, and rely more heavily on other environmental cleanup programs to address potential future risks and sites where there are viable, potentially responsible parties. In this context, they note that EPA's Science Advisory Board has evaluated the risks addressed by the Superfund program, as a category, to be "low" compared to other categories of risks that EPA is responsible for addressing. They were unwilling to discuss increasing appropriations to the Superfund program unless issues related to risk could be resolved.

Other Subcommittee members believe the Superfund program already addresses the right types of risks and sites, that addressing these risks is vital to protecting and restoring communities that are adversely impacted by releases of hazardous substances, or, in fact, are concerned that the Agency's implementation of the hazard ranking system may already underestimate certain types of risks at certain sites. For example, these members believe that if EPA were to focus the program only on sites or portions of sites that pose

² Beginning in 1986, Superfund was funded through an environmental income tax on larger businesses and an excise taxes on the petroleum and chemical industries. Congress allowed these taxes to lapse in 1995.

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1 current unacceptable risks to humans or sensitive environments, it will be essentially
2 abandoning the idea that cleanups should prevent threats from growing or that cleanups
3 would routinely, if ever, be “complete,” resulting in areas of contamination being left in
4 or near communities and in the environment.

5
6 Decisions about funding and risk have serious implications for the fundamental public
7 policy decisions that have defined the Nation’s program for cleaning up contaminated
8 sites to-date. What is the proper balance between addressing higher priority risks at a
9 larger number of sites without fully completing remedies and bringing a smaller number
10 of sites to full completion? Is refocusing on current unacceptable threats appropriate
11 because it could allow limited Superfund dollars to be spread across more sites, and
12 address more threats in more communities in less time? Or should the available money
13 be used to address a smaller number of sites, but to restore them completely considering
14 both current and potential future threats? These are the policy questions that EPA must
15 decide. Although the Subcommittee makes some specific recommendations relative to
16 some of these issues, at a basic level they are very difficult questions which the
17 Subcommittee did not fully resolve.

18
19 Additional discussion of the Subcommittee’s views on risk are addressed in the context
20 of other policy options and recommendations in the report.

II. Recommendation for a Limited Increase in Appropriations to Fund Remedial Actions

[This proposal was developed by a small cross-section of Subcommittee members following up on a suggestion that Gary King made at a past full Subcommittee meeting. It has not been reviewed by the full Subcommittee before being included in this draft and should be acknowledged that the Subcommittee may not reach consensus on this idea or this language.]

Despite their differences in views, the Subcommittee worked hard to develop a package of recommendations that would represent meaningful improvements to the Superfund program even as they might not fully resolve some of the fundamental issues raised in discussions of funding and risk. One of the most difficult challenges the Subcommittee faced in its deliberations was how to address the testimony from EPA and representatives of state environmental agencies that the Superfund program currently is experiencing a funding shortfall in some part attributable to the need to fund remedial construction at a handful of large orphan sites.

The Subcommittee attacked this challenge from several perspectives. Recommendations 1 – 5 presented later in the report recommend improvements to the listing process that, if implemented, should bring a better focus to EPA’s identification of NPL candidate sites and increase the number of PRP-initiated (and funded) actions and the use of other environmental cleanup programs where appropriate. Recommendation [number] calls for an independent-third party review of Superfund spending to find efficiencies and other opportunities to direct more money to physical construction at orphan sites. This review should include the appropriateness of Congressional earmarks, considered in light of the Subcommittee’s general sense that the Administrator needs greater discretion to fund remedial construction at orphan sites without impairing progress in routine preparatory and oversight work at enforcement-lead sites and pipeline work on fund-lead sites.

Nevertheless, the Subcommittee is concerned that while these reforms are proceeding, delays in funding construction at orphan sites such as New Bedford Harbor will continue

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to burden impacted communities and increase total project costs. Moreover, the Subcommittee has heard that the current funding constraints are impairing EPA's important "fairness" administrative reforms. Because EPA is funding constrained, it has less flexibility to pursue some of its program reforms that target fairness. When orphan share funding is constrained, the Agency's ability to incentivize responsible parties to perform cleanup by affording past cost forgiveness and other considerations where the performing party otherwise would pay far more than its fair share is also constrained. As one local government official attested, an efficient remedial program requires, among other things, that a few responsible parties take the lead to initiate cleanup under the assurance that their initiative will be rewarded with fairness.

1. The Subcommittee believes that these adverse impacts impair the long-term request for a limited term (e.g., three years) an increase in the annual Superfund budget sufficient to fund remedial actions at the key orphan sites EPA identifies. The Subcommittee believes that the cost of meaningful progress in remedial action at key orphan sites would be less than \$100 million per year.

The Subcommittee emphasizes that this recommendation is conditioned on the assumption that EPA diligently conduct the reforms recommended and described in other sections of this report in order to minimize the number of years for which this supplemental appropriation is required. Moreover, in order to assure that this increase does not come at the expense of other needed services provided under the VA/HUD/Independent Agencies appropriation, the Subcommittee recommends that the Administration seek a waiver from the budget cap for this limited purpose.

This recommendation is not contingent upon the reimposition of the Superfund taxes. The Subcommittee was divided on the issue of tax revival, with some members supporting and others opposing. The Subcommittee is united, however, in its agreement that the funding of remedial construction is sufficiently important -- for both the

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1 communities impacted by these sites and the fair implementation of the Superfund
2 program -- that general revenues should be used for the special appropriations we
3 recommend. In other words, the Subcommittee was willing to put its disagreement about
4 the source of added funding aside to craft a realistic supplemental funding proposal that it
5 believes the Administration and Congress can support and incorporate into the 2005
6 budget.

7
8 **Subcommittee Members Had Strong Views about the Superfund**
9 **Taxes**

10
11 [This text suggested by Grant Cope to characterize one perspective regarding the
12 Superfund taxes. It has not been reviewed by the full Subcommittee before being
13 included in this draft, and we know that other Subcommittee members may wish to
14 express their views of the Superfund taxes as an alternative to this view.]
15

16 The Administration and Congress should approve and sign into law a reauthorization of
17 Superfund polluter pays fees, with increased authorizations and appropriations to ensure
18 that public health and environmental quality are protected at dangerous toxic waste sites
19 across the country. These fees, which every Administration, until recently, supported,
20 expired in 1995 and have not been reauthorized.

21
22 When Congress enacted Superfund in 1980, it gave the Superfund program two methods
23 of obtaining needed resources. First, Superfund has strong liability provisions that make
24 PRPs liable for cleaning up a site or, if a PRP refuses to clean up a site and EPA expends
25 money to remediate a site; PRPs are liable for EPA's clean up costs. Second, Congress
26 enacted fees on purchase of chemicals often found at toxic waste sites, petroleum (in
27 exchange, oil companies received a liability exemption for petroleum contamination at
28 Superfund sites), and a small levy on profits in excess of \$2 million for some larger
29 corporations.

30
31 These "polluter pays fees" provide the foundation for the program's ability to protect
32 public health and environmental quality in four important ways. First, the fees provide a

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1 stable source of funding that is not dependant on uncertain annual appropriations from
2 taxpayer funds, or “general revenue.” This point is critical because annual appropriations
3 from general revenue for domestic programs are capped at certain levels, which means
4 that Congress will only spend a set amount of money annually on such programs.
5 Therefore, Congress must pay for increases under one agency by reducing money going
6 to another agency. The polluter pays fees allow Congress to increase money going to
7 fund needed cleanups without taking resources away from other programs. This system
8 ensures that Congress can help communities threatened by toxic waste sites without
9 taking money away from other programs and promotes long-term management options at
10 Superfund sites, which is critical because EPA may need over a decade to clean up
11 heavily contaminated sites.

12
13 Second, the federal government appropriates money from collected fees to pay for EPA
14 clean up activities when PRPs refuse to undertake such action, cannot be located, or are
15 bankrupt. When EPA spends resources to clean up a site, the agency can recover such
16 cost from PRPs connected to that site. These cost-recovery funds go back into the
17 Superfund program to fund more cleanups. Third, the fees provide EPA with a stable
18 source of funding which is essential for a strong Superfund enforcement programs. This
19 enforcement program helps to expedite cleanups at Superfund sites and increases the
20 capacity of other federal and state clean up programs. A strong enforcement program
21 under Superfund also benefits other federal and state clean up programs as it creates
22 incentives for responsible parties to look for other cleanup options. PRPs may also
23 decide to do more work under other programs than they normally would to avoid dealing
24 with the Superfund program. Fourth, the fees promote pollution prevention activities, by
25 shifting cleanup costs to industries and products associated with the creation of toxic
26 waste sites, and, finally they ensure that EPA does not have to dip into the remedial
27 action portion of the budget to fund other necessary program activities, such as grants to
28 increase the capacity of state clean up programs.

III. Listing and Management of Sites on the NPL

This Section summarizes the information on the NPL that was evaluated by the Subcommittee, describes the Subcommittee's deliberations, and lists and describes the Subcommittee's thirteen recommendations related to use and management of the NPL. The Subcommittee framed four questions under which it organizes its recommendations on the use and management of the NPL.

- How can EPA make the best NPL listing decisions?
- How should EPA set priorities among listed sites?
- What are the options for increasing the resources available for cleanup?
- How should EPA increase the transparency of listing decisions?

Background and Context

In Section 105(a)(8)(B) of CERCLA, Congress requires the President to "list . . . national priorities among the known releases or threatened releases throughout the United States. . . ." This list has come to be known as the National Priorities List, or the NPL. It is further defined by regulation at 40 CFR 300.5 as "the list, compiled by EPA pursuant to CERCLA section 105, of uncontrolled hazardous substance releases in the United States that are priorities for long-term remedial evaluation and response."

The NPL is one of the cornerstones of the Superfund program, and decisions about the number and types of sites to list on the NPL have important implications for the Superfund budget and for affected communities and potentially responsible parties. Under [cite NCP] only sites listed on the NPL are eligible for funding of long-term cleanups (i.e., remedial actions) from the Superfund trust fund. Communities around NPL sites are eligible for technical assistance grants or TAGS. Although all parties potentially responsible for releases of hazardous substances are subject to retroactive, strict, joint and severable liability under CERCLA, potentially responsible parties (PRPs)

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1 associated with NPL sites are notified that the government has authority to spend
2 Superfund monies to conduct remediation action at these sites. Congress and other
3 program overseers closely monitor progress at sites listed on the NPL to measure and
4 evaluate program performance. The general perception is that an NPL listing identifies a
5 site as one of the most significant contaminated sites in the Nation, warranting the type of
6 funding and attention available under the Superfund program.

7
8 Although the perception is that the NPL reflects the most contaminated sites in the
9 Country, as the Superfund program has evolved, the NPL has come to reflect the subset
10 of the most contaminated sites that require Federal time, attention, and funding under
11 Superfund. Increasingly, when government funding is not needed for cleanup, sites that
12 present a level of risk would qualify to be listed on the NPL are instead being addressed
13 under other environmental remediation programs, such as state cleanup programs, or
14 through Federal alternatives to NPL listing.

15
16 Because NPL sites remain the focus of the Superfund budget and because progress at
17 NPL sites largely defines the success of the program, EPA asked the Subcommittee to
18 focus some of their deliberations on the role of the NPL, particularly as it relates to other
19 cleanup programs.

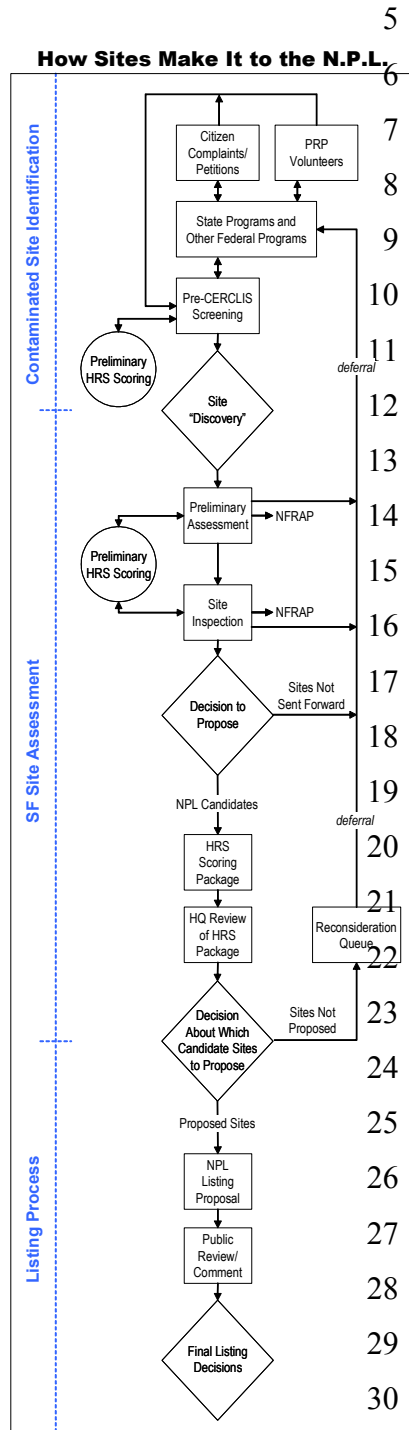
20
21 **The Size of the Problem**

22 [We understand that there remain comments and concerns about the data discussed in this
23 section. In December and January, we will work with interested Subcommittee members
24 and EPA to resolve any data issues and revise this text accordingly. The Subcommittee
25 will also be asked whether it would be appropriate to move some of this background
26 information into an Appendix to the report]

27
28 The Superfund program was created in 1980. After 23 years of Superfund
29 implementation, EPA and its partners in state environmental agencies and tribal
30 governments have identified over 45,000 sites for potential action under Superfund.
31 EPA has determined that nearly 33,000 of these sites (approximately 73%) do not require
32 remedial action under Superfund. At the end of FY 2003, 1,572 sites have been

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1 proposed for listing on the NPL and of these, 1,518 have been listed. Since 1980, 274
 2 sites have been deleted from the NPL because cleanups are complete. There are NPL
 3 sites in every state and most congressional districts. These sites are tangible for
 4 communities, often located in areas where people live, work, play, or go to school.



6 The Superfund process begins when a potential
 7 hazardous substance release site is reported to EPA.
 8 Usually these reports are made by a state
 9 environmental agency, but some reports are initiated
 10 by tribal governments, individuals and community
 11 groups. When potential sites are reported, the
 12 appropriate EPA regional office, often in conjunction
 13 with a state environmental agency, carries out a pre-
 14 screening evaluation to determine whether initiation of
 15 the Superfund site assessment process is appropriate.
 16 This typically involves verifying that there is
 17 information to support the possibility that hazardous
 18 substances are present at the site and that these
 19 substances are potentially addressed under CERCLA.
 20 It generally also involves evaluation of whether the site
 21 is covered by one of EPA's existing CERCLA deferral
 22 policies, such as the policy of deferring cleanup of
 23 hazardous waste treatment, storage and disposal
 24 facilities regulated under the Resource Conservation
 25 and Recovery Act (RCRA) to the RCRA corrective
 26 action program. Where EPA determines that the
 27 Superfund site assessment process is warranted, the
 28 Agency enters information about the sites into the
 29 Comprehensive Environment Response,
 30 Compensation, and Liability Act Information System

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(or CERCLIS), the Agency's database of sites that may need action under Superfund, and the Superfund site assessment process begins. In FY 2003, EPA added more than 240 sites to CERCLIS.³

The Superfund site assessment process is carried out largely by EPA regional offices, working with state environmental agencies and tribal governments. It has a number of steps, each designed to send forward only the sites that warrant additional attention under Superfund and screen out other sites. Sites might be screened out from further assessment under Superfund for a number of reasons, including:

- the site does not require further remedial action,
- the site is deferred to another environmental remediation program for cleanup, or
- EPA determines that an assessment using the Hazard Ranking System (HRS) likely would not result in an HRS score of 28.5, the threshold for NPL eligibility.

Sites that are not screened out by the process are considered "NPL eligible" sites. As used in this report, "NPL eligible" refers to sites that meet the statutory and regulatory eligibility criteria for NPL listing. That is, in general, sites with an HRS score of 28.5 or greater.

EPA regions choose which sites to submit to EPA headquarters for proposal to the NPL from among NPL eligible sites. They make these decisions by considering, in a qualitative sense, a variety of factors including the severity of contamination, the urgency of the problem, and the types of environment affected. In general, EPA guidance⁴ specifies that high priority should be given to sites:

³ Information provided by EPA from *eFACTS* on October 16, 2003.

⁴ U.S. EPA *Guidance on Setting Priorities for NPL Candidate Sites*, OSWER Directive 9203.1-06, 1992.

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- 1 ▪ Where people are currently exposed to hazardous substances, pollutants or
- 2 contaminants;
- 3 ▪ Where actual contamination has been documented, especially at or above a
- 4 health-based benchmark (SARA 118 requires a high priority where releases have
- 5 resulted in closing drinking water wells or have contaminated a principal drinking
- 6 water supply);
- 7 ▪ Where a large potentially affected human population is nearby;
- 8 ▪ Where contamination of a sensitive environment or fishery has been documented;
- 9 ▪ Where the State has recommended that the site be listed on the NPL; or,
- 10 ▪ Where the ATSDR has or is planning to issue a health advisory.

11

12 EPA headquarters works with the regions during this process by evaluating HRS scoring

13 packages for quality assurance and quality control, to ensure that only sites with

14 technically and legally defensible or documented HRS scores of 28.5 or greater are sent

15 forward. Sites that the regional offices identify as priorities (and that have final HRS

16 scoring packages with HRS scores of 28.5 or greater) are sent forward by the regional

17 offices to headquarters for proposal to the NPL. These sites are referred to in this report

18 as “NPL candidates.” Note that NPL candidate sites are a subset of NPL eligible sites,

19 comprised of those eligible sites that the regions identify as priorities for listing.

20

21 Beginning in 2002, EPA established a new step in the Superfund site assessment process.

22 In this step, the entire pool of NPL candidate sites submitted to headquarters by the

23 regions is also evaluated by a committee made up of regional and headquarters personnel.

24 This group primarily considers risks to human health and the environment and the

25 urgency of the need for response to further prioritize NPL candidate sites. It also

26 considers program management factors, such as projected costs to the Superfund trust

27 fund and timing of funding needs, maintaining a strong enforcement program, leveraging

28 cleanups by others, and state, tribal and community support for listing.

29

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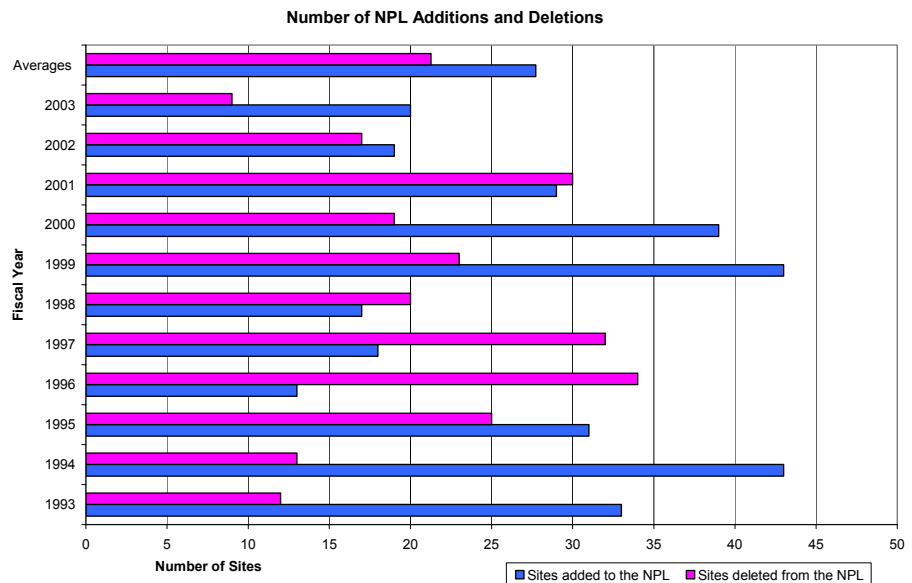
Those discussions are then considered by Headquarters staff who develop options for recommending NPL candidate sites to the Assistant Administrator for Solid Waste and Emergency Response. The Assistant Administer makes the final decision about which sites to propose for NPL listing. Listing proposals are then published in the Federal Register for public review and comment. Historically, EPA has finalized the majority of listings that it proposes.

At the end of FY 2003, of the 45,267 sites in the CERCLIS database, 38,178 (84%) have completed the assessment process; 1,519 are removal only sites; 1,733 are being cleaned up by other parties; and 3,837 still need assessments.⁵

The 1,572 sites which make up the NPL at the end of FY 2003 are distributed in the following manner:

- 54 sites (~3.5%) are proposed to the NPL, but are without final listing decisions;
- 1,244 sites (~ 79%) are considered final on the NPL; and
- 274 sites (~17.5%) have been deleted from the NPL.⁶ Sites remain on the NPL after completion of cleanup activities to ensure all actions are effective and working properly.

For the last decade of the program, additions have outpaced deletions and the NPL has continued to grow. A total of 305 new sites



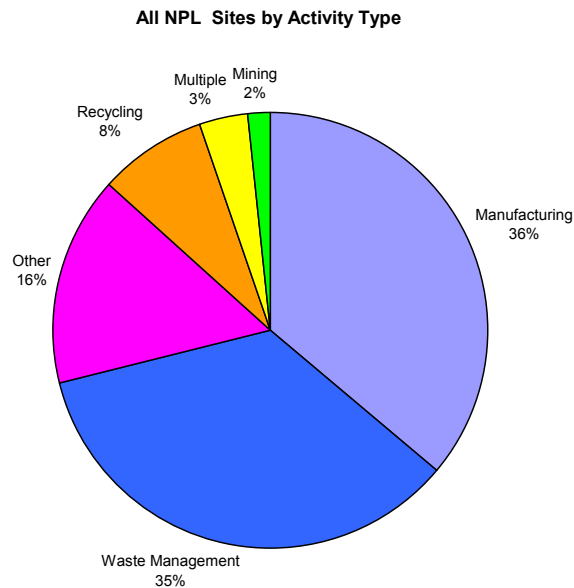
⁵ Information provided by EPA from *eFACTS* on October 16, 2003.

⁶ Ibid.

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were added to the NPL between FY 1993 and FY 2003, an average of 28 new NPL sites per year. Deletions average 21 sites per year over the same time period. The chart above compares additions and deletions by year for the last decade of the program.⁷

EPA categorizes sites on the NPL as federal or non-federal facilities and further categorizes them by type of industrial facility or activity associated with the contamination. Several main categories related to industrial sectors are used, such as manufacturing, waste management, and recycling, as well as a number of catch-all categories such as “multiple,” which refers to sites where more than one activity caused the site to be listed, and “other,” which includes military/ordnance production, dry cleaners, transportation, retail, and storage sites. The pie chart below shows the distribution of proposed, final and deleted NPL sites by site type category in FY 2003.⁸



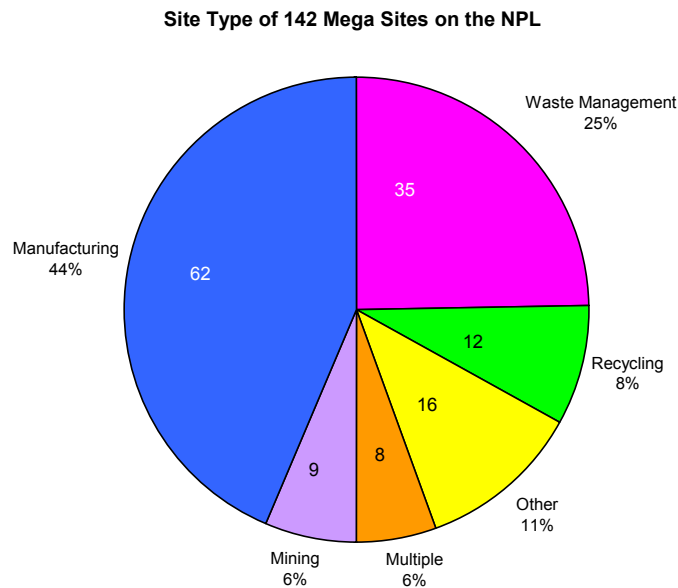
Another common way to categorize NPL sites is based on the costs of remediation. Sites where cleanup costs are estimated to exceed \$50 million have come to be referred to as “mega sites.” Of the 1,572 proposed, final, and deleted sites on the NPL in FY 2003,

⁷ From data on <http://www.epa.gov/superfund/sites/query/queryhtm/nplfy.htm>

⁸ Source: Data provided by EPA from Superfund eFacts database, as of October 16, 2003.

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1 142 are considered mega sites. While these sites make up approximately 9% of the NPL,
2 they have important impacts on the Superfund budget. In the briefings it provided to the
3 Subcommittee, EPA leadership explained that currently eight large, complex sites are
4 consuming approximately 40% of the money available for fund-lead remedial actions.
5 The chart below shows the distribution of these 142 final or deleted mega sites by site
6 type category in FY 2003.⁹



7
8 Finally, NPL sites are categorized based on whether remediation is being funded by EPA
9 or by potentially responsible parties (PRPs). EPA estimates that PRPs have funded
10 approximately 70% of remedial actions at nonfederal NPL sites in the last three fiscal
11 years.¹⁰

12
13 [Will add a flow chart of the remedial process, same as assessment process flowchart.]

14
15 Once a site is listed on the NPL, the remedial—or clean up—process starts. The first step in
16 the remedial process is a remedial investigation and feasibility study (RI/FS), during

⁹ PowerPoint presentation by Dr. Elizabeth Southerland to the Subcommittee on November 5, 2003.

¹⁰ GAO, *SUPERFUND PROGRAM Current Status and Future Fiscal Challenges* (July 2003), p 23.

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1 which a site is investigated to characterize the nature and extent of contamination and
2 contaminant sources, and remedial options are identified and evaluated. The culmination
3 of the RI/FS is EPA's issuance of a proposed record of decision (ROD). The proposed
4 record of decision identifies EPA's selected remedy for the site. After public review and
5 comment, a final ROD is issued. The selected remedy is then designed and implemented.
6 This phase is typically known as remedial design and remedial action, or RD/RA.

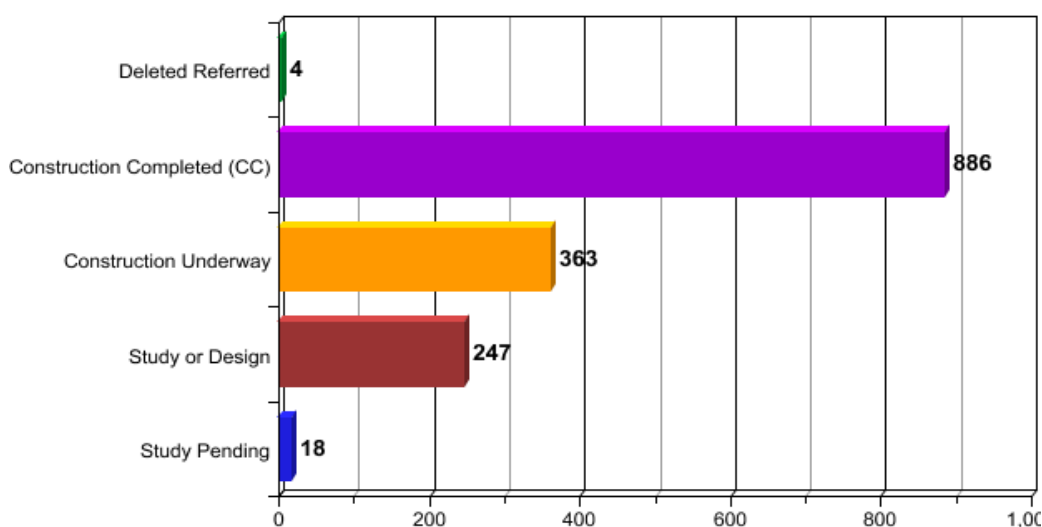
7
8 When physical construction of the remedy is complete, all immediate threats have been
9 addressed, and all long-term threats are under control, a site generally is considered to be
10 "construction complete." Construction complete is the primary measure of program
11 progress for sites on the NPL. After construction of the remedy is complete, a site enters
12 the operation and maintenance (O&M) phase of cleanup, during which remedy
13 implementation continues. When remedy implementation is complete and remedial goals
14 have been achieved, EPA may delete a site from the NPL.

15
16 The figure below displays the pipeline status of the 1,518 final and deleted sites on the
17 NPL as of the end of FY 2003. The majority of final and deleted NPL sites (~ 58%) are
18 in the construction complete phase, the key measure of progress on the NPL.¹¹

19
20
21
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24
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28
29 ***NPL Pipeline Status of 1,518 Final and Deleted Sites***

¹¹ Data provided by EPA from Superfund eFacts database, as of October 16, 2003.

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1
2 Although the number of sites listed on the NPL has continued to increase over the past
3 ten years, and projects currently in or about to enter remedy construction tend to be
4 larger, more complex and more expensive than those of 5 to 10 years ago, EPA's budget
5 for Superfund has diminished over the same time period. According to the July 2003
6 GAO report to Congress on the financial status of the Superfund program, the program's
7 total annual appropriations (in constant 2002 dollars) has decreased from a high of
8 approximately \$1.9 billion in FY 1993 to a relatively constant annual budget of \$1.3
9 billion in recent years.¹² Approximately \$175 million of this decrease represents a
10 congressional decision to separately appropriate resources to ATSDR and NIEHS in 2000
11 and the brownfields program in 2002¹³— these appropriations were formerly included in
12 the Superfund budget, but earmarked and therefore beyond EPA's control.¹⁴ Subtracting
13 these funds would result in an overall decrease in the Superfund budget of approximately
14 \$425 million in the past decade.

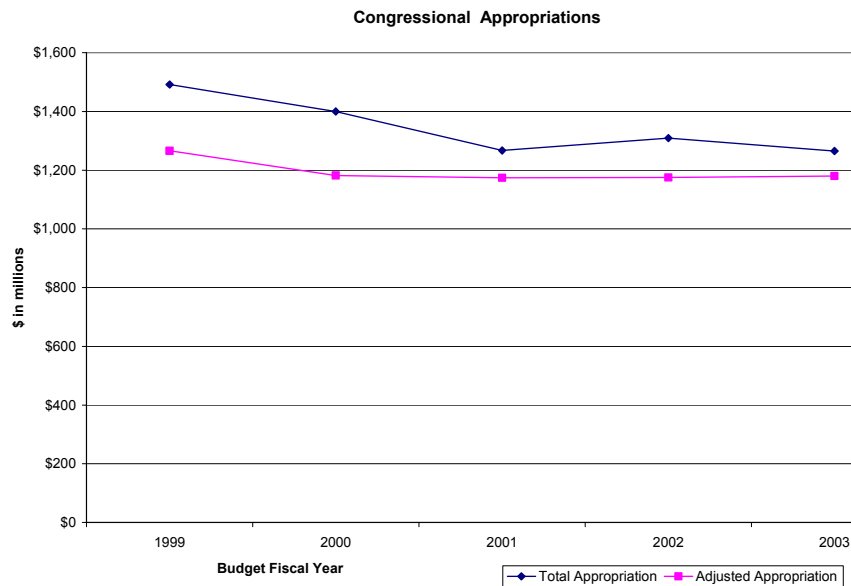
¹² GAO, *SUPERFUND PROGRAM Current Status and Future Fiscal Challenges* (July 2003), p 11.

¹³ The Brownfields program was not part of the Superfund budget in FY 1993.

¹⁴ Data on history of Congressional appropriations for the Superfund program 1999–2003 provided by EPA September 2003.

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1 The figure below compares the total Superfund appropriation to an adjusted base
2 appropriation for the past five years. The adjusted base appropriation was developed by



3 subtracting
4 congressionally
5 mandated
6 allocations within
7 the Superfund
8 budget (i.e.,
9 ATSDR, NIEHS,
10 Brownfields in
11 past years and FY
12 2002 Homeland
13 Security
14 Supplemental

15 Budget). It more accurately represents the amount available to the program. Over the
16 past five years, the adjusted base has averaged just under \$1.2 billion annually.¹⁵

17

18 The overall net reduction in the Superfund budget is amplified by a number of factors,
19 which include the following.

20

- 21 ■ The Superfund budget generally is not adjusted upward to account for cost of
22 living salary adjustments (COLAs) and other salary increases for federal
23 employees—EPA typically covers these costs by increasing the percentage of the
24 overall Superfund budget that is spent on personnel.
- 25 ■ EPA has limited ability to reallocate resources within its own budget without
26 congressional approval. For instance, when the appropriations act is passed by
27 Congress, it defines funding levels for certain transfers within the Superfund

¹⁵ Data on history of Congressional appropriations for the Superfund program 1999–2003 provided by EPA September 2003.

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1 program, including to the Office of the Inspector General, Office of Research and
2 Development, and other federal agencies. The appropriations act also establishes
3 funding levels, or function caps, within broad categories (e.g., response,
4 enforcement, management) that mandate what percent of the Superfund budget
5 must be spent on these categories. Reallocation of resources between functions
6 requires congressional approval for amounts over \$500,000.¹⁶

- 7 ▪ The lack of flexibility influences funding prioritization decisions and can lead to
8 increased costs caused by delay.¹⁷

9

10 In addition to the total Superfund budget shrinking, the source of funding for the
11 appropriation has changed. More money is being allocated from general fund
12 appropriations instead of the Superfund trust fund, which was funded through excise
13 taxes on crude oil and petroleum products and sales of certain chemicals, and the
14 environmental tax on corporations that Congress allowed to lapse in 1995. To illustrate
15 this shift, the figure below is taken from a 2003 GAO report¹⁸ and shows the total annual
16 appropriation (including Congressional earmarks) to the Superfund program from 1993 to
17 2002 and the relative percentage of trust fund and general fund monies.

18

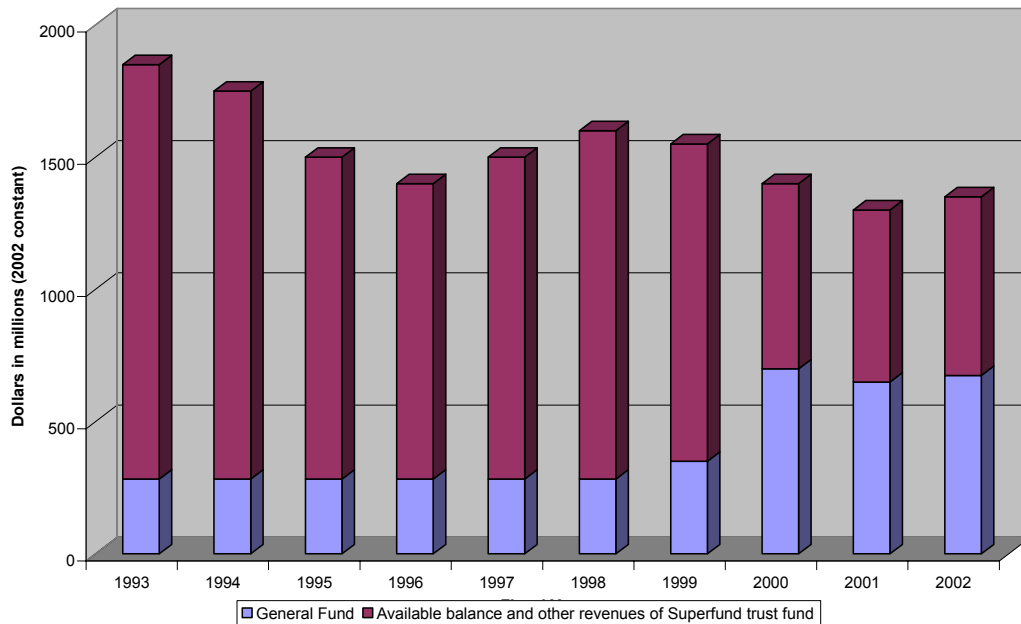
¹⁶ Power Point presentation to the Subcommittee by Dr. Elizabeth Southerland on November 5, 2003.

¹⁷ Ibid.

¹⁸ GAO-03-850 Report to Congress: *Superfund Program – Current Status and Future Fiscal Challenges*, July 2003, pp 9-11.

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Figure 3: Total Appropriations to the Superfund Program, Fiscal Years 1993 through 2002

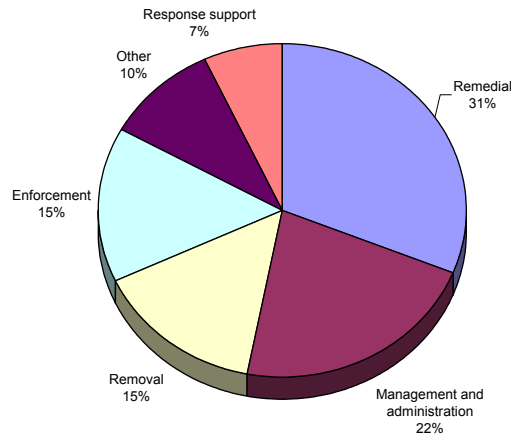


Over the past ten years, remedial actions and related work such as site investigations, remedy design, community involvement, post-construction monitoring, and oversight of responsible parties have consumed the largest part of the Superfund budget, approximately 31% in FY 2002. In general, program management activities such as policy development, emergency preparedness activities, contract and information management, training, and general support consume the second largest share of the budget, approximately 22% in FY 2002. The pie chart below, from GAO's 2002 report on the Superfund program, illustrates EPA's Superfund program expenditures in FY 2002.¹⁹

¹⁹ Data provided to GAO by EPA, which also determined which activities to include in each category. See GAO, *SUPERFUND PROGRAM Current Status and Future Fiscal Challenges* (July 2003), p 13. Total program expenditures for FY 2002 were \$1.34 billion. *Remedial* costs include investigations, remedy design, community involvement, construction, post-construction, and oversight of responsible parties. *Removal* costs include assessments, investigations, removal construction, and oversight. *Response support* includes site-specific costs related to technical assistance, technology innovation, contract management, records management, and general support to other organizations through grants, interagency and/or cooperative agreements. *Management and administration* includes non-site specific costs such as program

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Figure 5: EPA's Superfund Program Expenditures, Fiscal Year 2002



[Please note: The information below is taken from budget information provided to the Subcommittee in the past. There remains concern about the accuracy of the figures and what is represented within the categories. In December and January, interested Subcommittee members will work with EPA to refine the numbers before the final report is completed.]

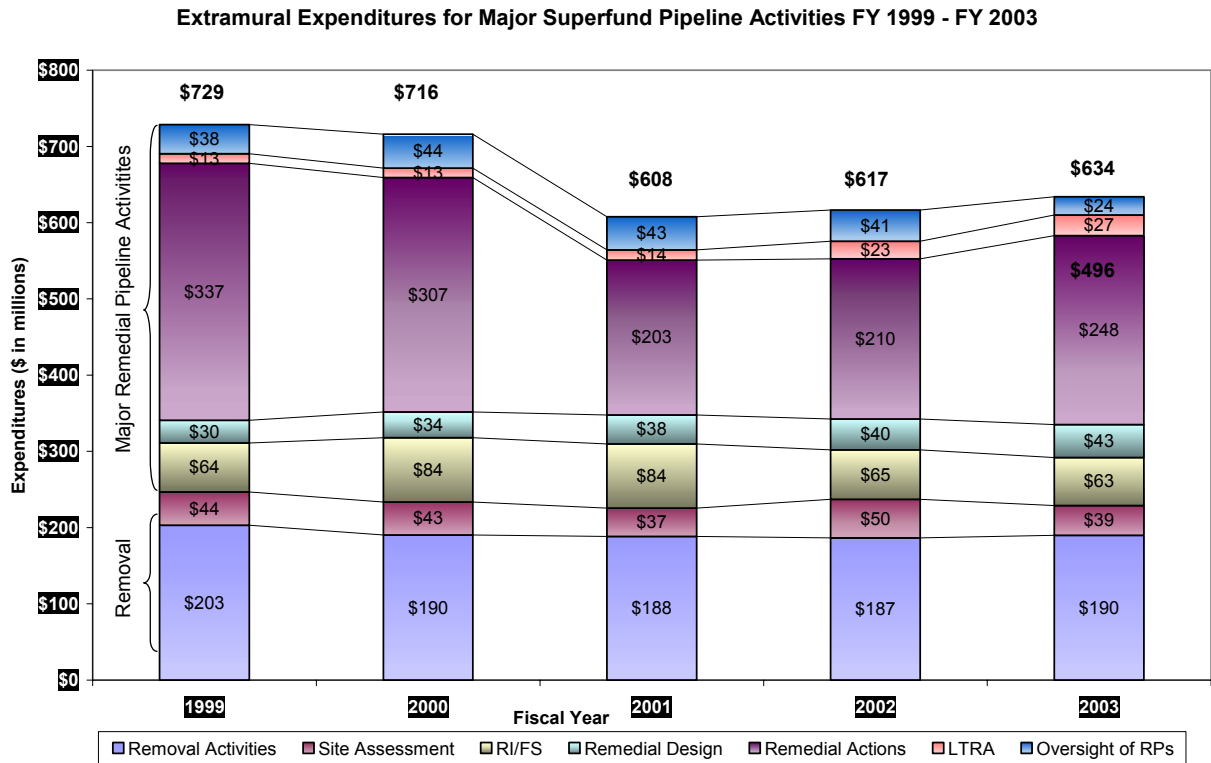
The extramural response program budget, which includes removal and remedial activities and generally represents the amount spent on cleanup activities in the field, has declined 26% from FY 1999 to FY 2003, according to historical program expenditure information provided by EPA. The bar chart below, created from data provided by EPA,²⁰ demonstrates this decline over time. The most dramatic decline in expenditures, from FY 2000 to FY 2001, corresponds to an overall reduction of \$100 million to the Superfund program that began in FY 2000. Additionally, payroll increases for Superfund program staff, mentioned earlier in this report, have traditionally been covered through reductions

management and budget, policy development and implementations, emergency preparedness activity, contract and information management, training, and general support. *Enforcement* costs include searching for and negotiating agreements with responsible parties. *Other* includes site assessment, federal facilities, and Brownfields, which is no longer funded through a Superfund appropriation as of FY 2003.

²⁰ 2003_06_23 LAY ESTIMATE FIN2 04.XCL, Table 3, provided by EPA on August 12, 2003 and recent FY 2003 information provided at November 5, 2003 Subcommittee meeting.

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- 1 to the extramural remedial program budget, contributing to the overall decline in
 2 expenditures.²¹



- 3
 4
 5 It is within this budget framework that the Subcommittee was asked to help EPA
 6 essentially figure out how to do more with less.
 7

²¹ 2003_06_23 LAY ESTIMATE FIN2 04.XCL, excel spreadsheet provided by EPA on August 12, 2003.
 Table 3 explanatory notes.

How Should EPA Make the Best Listing Decisions?

Given the diversity of members' views on funding and risk (see discussion in Background section), the Subcommittee approached the question "what types of sites belong on the NPL?" largely by examining the NPL listing process and asking "how should NPL listing decisions be made?" The reasoning behind this approach is that if the process for listing decisions is rigorous and robust, the overall quality of decisions likely will be appropriate. It acknowledges that the Subcommittee is not able to fully resolve divergent views about funding or risk or many of the fundamental public policy differences that these divergent views imply. The Subcommittee focused on improving the use of the NPL by optimizing EPA's current practices rather than by fundamentally redefining the program.

EPA will continue to be responsible for difficult choices about how many and what types of sites to list on the NPL, and funding will continue to be a limiting factor for Superfund cleanups. In its deliberations on the listing process, the Subcommittee set for itself the objective of articulating an approach to NPL listing decisions in which the NPL is a true representation of the highest national priority sites in need of CERCLA resources while, at the same time, recognizing budgetary constraints.

The Subcommittee's view of the future role of the NPL does not resolve the divergent views about funding and risk or the fundamental issue of how many and what types of sites should be listed on the NPL. The views of the diverse interests on the Subcommittee with respect to these issues are reflective of the range of views in the larger society with regard to these issues and the conduct of the Superfund program. As a result, EPA will continue to be faced with making tough choices about how many and what types of sites to list on the NPL. The Subcommittee's recommendations can guide the Agency in making these decisions. Given the site- and community-specific sets of factors that typically result in a site being recommended for the NPL, such choices are best made in the context of the public processes associated with site-specific NPL listing

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1 proposals, guided by the factors and other considerations recommended by the
2 Subcommittee. The Subcommittee's desire is that EPA use the NPL listing process to
3 achieve a number of outcomes, as follows.

- 4
5 ▪ The NPL should reflect sites that pose a significant risk to human health or the
6 environment and that likely will not be adequately cleaned up, absent the
7 resources (i.e., time, attention, and funding) brought to bear by an NPL listing.
8
- 9 ▪ The definition of significant risk should remain relatively consistent over time,
10 with listing decisions based on application of a standard set of criteria, rather than
11 a comparison among NPL-candidate sites in any given year.
12
- 13 ▪ Sites to be considered for NPL listing should continue to be identified by citizen
14 petitions, state and local governments, Tribal nations, and EPA regional offices,
15 with appropriate opportunities for input from potentially affected communities
16 and potentially responsible parties.
17
- 18 ▪ Rigorous review of HRS scoring packages at the EPA headquarters level should
19 continue to ensure proper application of the HRS model through review of listing
20 packages and bring a national perspective, consistency and professional judgment
21 to bear, while recognizing that state and local governments, Tribal governments,
22 and EPA regions are closer to the sites and likely have the clearest understanding
23 of site conditions and other issues that should be considered when deciding to
24 recommend a site for listing.
25
- 26 ▪ EPA will continue to exercise judgment and discretion in selecting from among
27 NPL-eligible sites which sites to propose for listing; these decisions should
28 continue to be made primarily in regional offices where individuals are most
29 familiar with site-specific conditions, guided by consistent criteria and made

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1 through a process that encourages input from state environmental agencies, Tribal
2 governments, communities and potentially responsible parties.

3

4 The Subcommittee anticipates that this approach will result in a list of sites that pose risk
5 levels similar to those posed by sites listed in recent years, and that cannot be adequately
6 addressed through other environmental remediation programs. By continuing to ensure
7 that the NPL provides a Federal safety net for all eligible sites, this approach will
8 facilitate the use of other programs when they can appropriately clean up sites, but where
9 they cannot, sites will continue to be listed when they are determined to pose significant
10 risks, regardless of the projected cleanup costs, amount of CERCLA funding anticipated,
11 or degrees of risk at other sites being considered for listing in the same listing cycle. It
12 will mean that the NPL that may grow slightly over time, as new sites are added and
13 currently listed sites remain in the cleanup process, but that it may, over the long term,
14 decrease, as cleanups are achieved and the number of sites that require Federal time,
15 attention, or resources under CERCLA diminishes.

16

17 The Subcommittee's specific recommendations are designed to help EPA achieve these
18 outcomes. Recommendation 2 describes a set of factors that EPA should use to
19 determine which NPL-eligible sites to propose for listing. Recommendations 3 and 4 call
20 for EPA to continue and expand its practices of coordination and information sharing and
21 gathering during the site screening and assessment processes. Recommendation 5
22 outlines a robust approach to consideration of other programs as part of site assessment
23 and screening, and Recommendation 6 points to some specific improvements in EPA's
24 implementation of the HRS.

25

26 **The Role of Prevention**

27

28 The Subcommittee was not charged with specifically evaluating or making
29 recommendations on prevention programs. At the same time, no evaluation of the
30 Superfund program would seem complete without the observation that the best way to

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1 reduce the burden on the NPL, and other federal or state clean up programs, over time is
2 to prevent the creation of new sites that will require cleanup. The federal government,
3 states, Tribal nations, and other jurisdictions have numerous regulatory programs
4 designed to ensure safe management of hazardous materials or otherwise prevent
5 environmental contamination. Governments should enhance and emphasize preventative
6 programs, and owners and handlers of hazardous substances should exercise caution and
7 guard against potential environmental contamination. EPA should use Superfund
8 program data on recently listed sites to identify trends in listing and, from these trends,
9 target and improve prevention activities.

10
11 EPA should consider enhancement of preventative activities by undertaking actions that
12 Superfund currently requires, but which the agency has thus far failed to implement, and
13 by initiating other common-sense preventative activities. These include:

- 14
15 ▪ Section 108(b) of Superfund requires EPA to “promulgate requirements (for
16 facilities in addition to those under subtitle C of [RCRA] and other Federal law)
17 that classes of facilities establish and maintain evidence of financial responsibility
18 consistent with the degree and duration of risk associated with the production,
19 transportation, treatment, storage, or disposal of hazardous substances.” The
20 agency should create these regulations and use them to benefit facilities that
21 demonstrate success with pollution prevention efforts that decrease the likelihood
22 that toxic waste sites will be created in the future. When regulating the use of
23 such tools, EPA should also assess the need, adequacy, and effectiveness of
24 financial assurance and insurance mechanisms. EPA should analyze all
25 reasonably available information on the strengths and weaknesses of current
26 financial assurance mechanisms, the effectiveness of current financial assurance
27 and insurance tools in addressing potential clean up costs, the level of compliance
28 with existing assurance and insurance requirements, and past agency efforts to
29 correct any potential deficiencies in such requirements.
30

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1 ▪ EPA should focus expanded pollution prevention efforts on industries that pose
2 the biggest potential threats of creating future fund-led toxic cleanups. The
3 agency should begin by analyzing the industries that have a high risk of creating
4 toxic waste sites, especially sites that are likely to require orphan-share funding
5 from Superfund's trust fund. EPA should examine the adequacy of current
6 bonding requirements for the mining in industry, compliance with current
7 bonding requirements, state programs meant to prevent mining sites from
8 becoming toxic waste sites, and the status and rationale of current agency efforts
9 to address pollution problems related to past and current mining sites.

10
11 ▪ EPA's should also exercise its authority under existing law²² to condition the
12 permitting of facilities or activity that may result in the creation of toxic waste
13 sites. EPA should exercise this authority to ensure such facilities or activities do
14 not create toxic waste sites. Vigorous use of these authorities will enhance
15 protections for public health and preserve scarce federal cleanup resources by
16 reducing the pool of sites in need of funding.

17
18 EPA should undertake pollution prevention reviews in an open and transparent
19 fashion that integrates the local community into the decision-making process and that
20 utilizes community right to know tools. Communities located near facilities have a
21 long-term interest in working with EPA and industry to promote pollution prevention
22 programs that provide opportunities for sound economic development, while reducing
23 threats to public health and the environment. EPA should also make use of right-to-
24 know tools to inform the public about EPA's pollution prevention efforts on a site-by-

²² E.g. Pollution Prevention Act, 42 U.S.C. §§ 13101 *et seq.*; Toxic Substances Control Act, 15 U.S.C. § 2605; Surface Mining Control and Reclamation Act, 30 U.S.C. § 1265(b)(10); Clean Water Act, 33 U.S.C. § 1252; Safe Drinking Water Act, 42 U.S.C. §§ 300h-7(a)(3)-(4), 300h-8(c)(2), 300j-13(a)(1); Resource Conservation and Recovery Act, 42 U.S.C. § 6902(b); Clean Air Act, 42 U.S.C. § 7401(4); and Comprehensive Emergency Response Compensation Liability Act, 42 U.S.C. 9608(b)(1)-(2) (Superfund); and National Environmental Policy Act, 42 U.S.C. §§ 4321 ("promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man"), 4331 (requiring the use of "all practicable means...to improve and coordinate Federal plans, functions, programs, and resources"), and 4332 (A) and (C)(iii).

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site, company-by-company, and industry-by-industry basis. This would provide transparency and accountability to EPA's efforts, and an additional incentive for companies to vigorously implement pollution prevention efforts

1. Recommendation 2: EPA regional offices, in collaboration with their partners in of criteria to choose which NPL eligible sites to propose for listing in each listing cycle. The role of EPA headquarters is to ensure that final HRS scoring packages are legitimate and defensible and to bring a national perspective and judgment to bear on the NPL candidates sent forward by regional offices. Anticipated cleanup costs or funding should not be criteria used to include or exclude sites from the NPL.

[Note: this is the draft recommendation that emerged as part of the package the ad hoc NPL workgroup discussed. We understand that some Subcommittee members are still thinking about the language on cost/funding and may wish to develop an alternative package of recommendations.]

As discussed in the Background and Context Section, above, EPA regional offices, typically in collaboration with state environmental agencies and Tribal governments, use a site screening and assessment process to evaluate potential NPL sites, determine which sites are eligible for the NPL, and distinguish from the eligible sites the subset of sites that are national priorities, and should be proposed for NPL listing. In any given year, regional offices and their partners in state environmental agencies and Tribal governments may identify hundreds of sites that are eligible for NPL listing, but only tens of sites that represent national priorities and are sent forward as candidates for the NPL.

Subcommittee deliberations focused on three elements of the process EPA uses to distinguish NPL-candidate sites from the many sites that are eligible for NPL listing. First, how, if at all, should anticipated cleanup costs or funding be considered in these deliberations? Second, what criteria should EPA use to distinguish NPL-candidates from

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1 NPL-eligible sites? Finally, what should be the role of EPA regional offices and the role
2 of EPA headquarters in determining NPL-candidate sites?

3
4 **Anticipated Costs and Funding**

5
6 The recommendation mandates that EPA not use estimates of cleanup costs or funding
7 available to make decisions to include or exclude sites on the NPL. While the
8 Subcommittee recognizes that it cannot prevent decision makers from having an
9 awareness of costs, or knowledge of likely program funding, it does not believe that these
10 factors should artificially limit the number or types of sites listed on the NPL or
11 artificially grow the list. The NPL should represent true national priorities—sites that
12 meet the eligibility criteria and are judged by EPA to need the time, attention, and
13 resources that the Superfund program brings to bear. As described earlier in this Report,
14 the Subcommittee had extensive discussions about costs and funding, and at a
15 fundamental level did not reach agreement on how much money the Superfund program
16 should be allocated, where that money should come from, or the related issues of what
17 risks the Superfund program should address and, therefore, how much cleanups should
18 cost. In their recommendation on the role of anticipated costs and funding in NPL listing
19 decisions, the Subcommittee has put aside those disagreements in order to jointly support
20 a package of recommendations that, overall, represent an approach to improvements to
21 the current NPL listing process that all Subcommittee members can live with.

22
23 **Factors to be Considered**

24
25 NPL eligibility is largely determined based on evaluations of risk; NPL candidacy (i.e.,
26 which eligible sites to propose for the NPL) is largely determined based on factors more
27 related to program management. The Subcommittee's recommendation calls for EPA to
28 use a consistent set of factors to distinguish NPL candidate sites, not a comparison among
29 sites. The factors listed below assume that a site is eligible for NPL listing by virtue of a
30 projected HRS score of 28.5 or greater or other eligibility criteria, and are based on the

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factors outlined in EPA's current guidance for priority setting at NPL candidate sites, OWSER Directive 9203.1-06.

- Are there risks not reflected in the projected HRS score?
- What are the risk drivers? OSWER Directive 9203.1-06 lists seven sets of environmental factors that speak to risk drivers and calls for each set of environmental factors to be evaluated qualitatively using best professional judgment for both scored and unscored HRS pathways.
- Is or will another program appropriately address the site? The Subcommittee emphasizes this factor. The Agency should not use scarce Superfund time, attention or funding when another program could appropriately address a site and has the capacity (people and resources) to carry out cleanup.²³ Such programs might include: state or Tribal environmental programs, redevelopment programs, and other federal programs such as the RCRA corrective action program. The Subcommittee speaks to the importance of this factor in two related recommendations: Recommendation 4 addresses consideration of other programs specifically during site screening and assessment, and Recommendation 8 addresses leveraging activities that may be undertaken by other programs at or near listed sites.
- Are removal actions complete, underway or scheduled? If so, will they significantly reduce risks?
- Have PRPs completed, undertaken, or scheduled response actions at the site and are such actions likely to continue? Many state environmental cleanup programs have the authority to enter into enforceable agreements that can be used to ensure and oversee cleanup. Sites that are being appropriately addressed under such

²³ As discussed later in this Report, the Subcommittee does not anticipate that many, if any, other cleanup programs will have access to the public funding necessary to independently pay for cleanup at NPL-caliber sites, their primary role will be in providing alternative administrative mechanisms and staff resources to compel and oversee cleanups. Of course, where funding is available this should be carefully considered. This issue is discussed more fully in recommendation 4.

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agreements should not, in general, be considered candidates for the NPL. In Recommendation 3, the Subcommittee addresses the need for earlier involvement of communities (and PRPs) in site screening and assessment.

- What is the degree of public concern? One of the reasons that the NPL is the most appropriate approach for some sites is that using Superfund may be the only practical way to respond to the high degree of public concern in some communities. As part of evaluating this issue, EPA should also consider the extent to which a community has been notified of a site and involved in site screening and assessment to date. In Recommendation 3, the Subcommittee addresses the need for earlier involvement of communities (and PRPs) in site screening and assessment.
- What is the degree of support for listing from state or Tribal governments? EPA has a policy of seeking state Governors' and Tribal governments' concurrences on all new NPL listings, and has a procedure in place to attempt to resolve issues when states or Tribes are concerned about a listing.
- Is the site in a community that bears a disproportionate burden from environmental contamination or are there other environmental justice concerns associated with the site?

Role of Regions and Headquarters

In 2002, EPA instituted a national-level process in which officials from the regional offices and headquarters evaluate all NPL candidate sites, group them in tiers based largely on the significance and urgency of risk, and use this process to make recommendations to the Assistant Administrator for OSWER about which NPL candidate sites should be proposed for NPL listing. Prior to this process, EPA headquarters generally was involved in decisions about identification of NPL candidate sites by providing guidance on application of national policy and playing a quality assurance and

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1 quality control review to ensure that listing packages were appropriate and legally
2 defensible.

3
4 In the past, in general, the vast majority of NPL candidate sites sent forward by regional
5 offices (provided the HRS score was legitimate) would be proposed to the NPL. After
6 the advent of this new process, approximately half the NPL candidate sites sent forward
7 by regional offices have not been proposed for NPL listing. Instead they are held over
8 for reconsideration in future listing cycles.

9
10 The Subcommittee had a range of views about the national-level review process. Some
11 Subcommittee members were very supportive of this review, as a necessary step in EPA
12 ensuring quality listing decisions. Others view it as an unnecessary step, further
13 removing decision-making from those in the states and regions who are most familiar
14 with site-specific circumstances and therefore best equipped to make decisions about
15 which sites constitute a national priority. As part of the compromise on this package of
16 recommendations on NPL listing, Subcommittee members were willing to put aside these
17 differences, provided that any national-level review process be used for purposes of
18 bringing a reasonable degree of national consistency and judgment to bear on NPL listing
19 proposals, for monitoring regional offices implementation of program guidance
20 (including application of the factors listed above), for ensuring an appropriate degree of
21 geographic fairness in NPL listings, and for continuing to ensure that HRS packages are
22 of high quality and legally defensible. Subcommittee members who otherwise do not
23 favor a national-level review process are willing to live with it if it is limited to these
24 functions. The Subcommittee emphasizes that, fundamentally, any national-level review
25 process must be focused on ensuring quality application of the system for distinguishing
26 NPL candidate sites described above and in subsequent recommendations—it should not
27 be used to bring new factors (such as cost or funding) to bear on NPL listings.

28
29 The Subcommittee recognizes that one of the implications of this approach is that the
30 NPL may grow faster than it did in 2002 and 2003, and that this growth will continue to

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put pressure on the Agency to do more with scarce resources. The Subcommittee addresses the resource issue in Recommendations [numbers], which deal with increasing the funding for remedial actions, and in Recommendation [number] which addresses priority setting at listed sites.

Cautionary Note

Finally, the Subcommittee emphasizes that, although it has chosen to address the question of “what sites belong on the NPL?” by recommending a package of improvements to the current NPL listing process, it is not advocating that EPA redirect resources from on-the-ground cleanup activities to these reforms. Because these reforms represent improvements to existing systems, the Subcommittee expects that the Agency can accomplish them within existing systems. In addition, the Subcommittee is not intending that EPA would delay timely listing of a site that is an obvious candidate for the NPL or otherwise slow or delay NPL listings due to implementation of these recommendations.

Recommendation 3: EPA should continue to coordinate and collaborate with state consideration as possible NPL sites and should strengthen its partnership relationships with state environmental agencies and Tribal nations wherever possible.

[Note: some Subcommittee members are not inclined to support this recommendation because it simply restates the status quo.]

There are hundreds of thousands of contaminated sites across the United States. These range from relatively simple gas station cleanups to complex urban waterways and sites affecting hundreds of acres. Of all these sites, only a small fraction will rise to the level of a national priority for Superfund. As described earlier in this Report, EPA already routinely collaborates with state officials and Tribal governments in identifying sites for consideration for the NPL and in the pre-screening and Superfund site assessment

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processes that lead up to a decision to propose a site for NPL listing. Collaboration between Tribal nations, states, and EPA regional offices is an important step in sorting through contaminated sites and ensuring that resources for Superfund site assessment, and eventually cleanup, are oriented towards the sites that truly require national attention. This recommendation is intended to ratify the importance of these coordination efforts and relationships, and encourage EPA to strengthen coordination efforts where possible.

The Subcommittee is not recommending expenditure of significant resources on standardization or formalization of coordination practices or development of volumes of guidance on coordination. Based on information provided by EPA and on members' experiences, the Subcommittee's overall impression is that, in general, individual EPA regional offices have developed practices of coordination that they believe are appropriate to their region- and state-specific circumstances. These practices include regional decision teams, site "watch lists," and other strategies. Informal region- and state-specific approaches are appropriate as long as coordination is achieved. If the Agency believes it necessary in order to improve coordination activities in the regional offices, it might undertake a few discrete, time and resource limited tasks to further this recommendation. This might include:

- Evaluation of regional coordination activities to document best practices and ensure that all regions have coordination practices in place; or,
- Issuance of a brief guidance on coordination to the regions to promote a reasonable degree of national consistency and ensure an adequate level of consultation with states, Tribal governments, and other Federal agencies.

The Subcommittee emphasizes that it is not recommending the Agency divert resources from on-the-ground cleanup activities to fund these evaluations. Rather, the Agency should focus resources within its existing program management budget and, if necessary, shift staff responsibilities to accommodate any work necessary to support regional offices in achieving appropriate coordination outcomes.

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Text box: *What Prompts NPL Listing?*

In September 2002, in response to questions from this Subcommittee, EPA regional offices were informally surveyed by EPA headquarters staff about the factors that most often prompt initiation of the Superfund site assessment process and inform eventual NPL listing. Not all Regional offices responded completely; however, based on responses from seven regional offices, it appears that the vast majority of sites that are considered for the NPL come to EPA's attention based on a recommendation from a state or a Tribal government or based on collaboration between a regional office and a state or Tribe. In general, state cleanup programs refer sites to EPA for consideration for the NPL; EPA does not "defer" sites to state programs. State regulators, for the most part, are the primary discoverers of contaminated sites, and state programs tend to be the default cleanup mechanism for most contaminated sites. When these programs cannot adequately address a site, for example because of a significant orphan share, Superfund and other alternatives are considered. Regions responded that the need for fund money to pay for cleanup (i.e., orphan share) was the reason for approximately states and Tribes sending forward approximately one-third of new NPL listings; lack of cooperation from PRPs was listed as the reason for another third of new listings.]

Recommendation 4: EPA should reach out to potentially affected communities and share and solicit information about sites being considered for NPL listing.

Currently, potentially affected communities and potentially responsible parties, if known, are involved in the screening and assessment activities that EPA carries out at potential NPL sites only on an ad hoc basis, if at all. This is troubling to the Subcommittee because communities and PRPs may have information about sites that may not be otherwise available. They also likely have views about cleanup needs at a site and how

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cleanup should best be accomplished that may influence EPA's screening and site assessment decisions.

EPA should reach out to potentially affected communities and PRPs earlier in the Superfund site assessment process. The purpose of this earlier involvement should be to share and solicit information about sites under consideration, and give communities and PRPs opportunities to participate in the site screening and assessment process.

Community leaders, site neighbors, previous site workers, and PRPs are sources of historical information and knowledge concerning site activities, contamination, and exposure pathways. While this information may come forward eventually, particularly for sites that move through the screening and assessment process to an NPL listing, bringing it forward earlier may help EPA make better screening, assessment, and eventually NPL listing, decisions.

Earlier involvement of communities and PRPs also may prompt PRPs to undertake and fund a cleanup without an NPL listing, for example, under the auspices of a state environmental cleanup program if appropriate, reducing or delaying the need for Superfund resources. This may be the case particularly where PRPs do not or no longer own the site under consideration, and, therefore, under the current process often do not become involved with discussions about a site until after a decision has already been made to pursue an NPL listing. To facilitate earlier identification and involvement of PRPs, the Agency should consider modifying its guidance on PRP searches to encourage searches earlier than the [name] phase of site assessment, particularly at sites where major PRPs no longer own or operate the property.

The Subcommittee is not recommending a specific process that EPA should use to reach out to communities and PRPs, nor is it recommending that outreach start at a specific point in the site screening or assessment process. These details are likely best left flexible, so that processes can be tailored to state-, regional- and site- and community-specific circumstances. At the same time, the Subcommittee emphasizes that it is not

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1 recommending diversion of Superfund resources to detailed outreach and involvement
2 activities or PRP searches at each of the approximately [400] sites that are entered into
3 the CERCLIS database every year. EPA should reach out to these individuals screening
4 using targeted outreach efforts or other informal means. Involvement should begin as
5 early as practicable in the site assessment and screening process, but should be carried
6 out only where EPA believes there is a high likelihood of a site's eligibility for NPL
7 listing.

8
9 Finally, a cautionary note: the Subcommittee's recommendations on coordination are
10 meant to improve listing decisions, not to delay them. EPA should not allow
11 coordination efforts to delay a listing decision when it is clear that the NPL is the most
12 appropriate cleanup method to use at a site. If a site is proposed for listing, the listing
13 process and the subsequent cleanup provide numerous opportunities for coordination and
14 involvement. The Subcommittee emphasizes that EPA retains sole discretion to make
15 decisions about which sites to list on the NPL and these recommendations are not
16 intended and should not be interpreted as fettering that discretion. The Agency has a
17 responsibility to make listing decisions in a timely and efficient manner, in accordance
18 with promulgated procedures and based on credible technical evidence.

19
20 ***Recommendation 5: As part of exercising its discretion in making listing decisions,***
21
22 ***programs and non-NPL federal programs in a consistent manner before sites are***
23 ***recommended for NPL listing. EPA should develop (1) more expertise on the***
24 ***capabilities and applicability of non-NPL programs, and (2) relationships with key***
25 ***managers in other programs, particularly federal programs, and should use its***
26 ***expertise and relationships to further encourage the appropriate use of non-NPL***
27 ***programs for cleanup of NPL-eligible sites.***

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1 The Subcommittee had extensive discussions about the role that other cleanup programs
2 should play relative to the NPL. The primary outcome of these discussions was
3 recognition that other cleanup programs should work in harmony with the NPL and that
4 both strong, functioning NPL and strong, functioning non-NPL cleanup programs are
5 needed to address the full range of contaminated sites and cleanup challenges that exist in
6 this country. In many ways, a strong NPL serves to strengthen other cleanup programs,
7 particularly state programs, by providing a certain alternative if progress is not made.

8
9 The second outcome of these deliberations was a desire among Subcommittee members
10 to ensure that to the extent other programs offer authorities, processes, or funds that will
11 facilitate cleanup of NPL-eligible sites, these “tools” are known and available to EPA
12 regional offices, deliberately and thoughtfully considered during site screening and
13 assessment, and used to complement Superfund processes and funding where they can be
14 applied to appropriately clean up sites.

15
16 The Subcommittee identified several ways in which non-NPL cleanup programs might be
17 a useful complement to the NPL.

- 18
19 ▪ A program might provide sources of funding that could be used to supplement
20 funding under Superfund. For example, under some circumstances the U.S. Army
21 Corps of Engineers can provide funding for environmental dredging in ways that
22 may complement an ongoing Superfund cleanup. Although the programs
23 considered by the Subcommittee in general do not have resources adequate to
24 independently fund expensive NPL-caliber cleanups, at the same time, any
25 potential for additional resources at specific sites should be seriously considered
26 and carefully investigated, especially in a time of funding challenges when even a
27 relatively small amount of additional funding might make a difference at a
28 particular site. In cases where this type of funding is provided by another
29 government Agency, it is critical that the use of this funding not affect the level of

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clean-up or other aspects of the implementation of the clean-up process in a manner that departs from the practices and standards of the Superfund program.

- Authorities from other programs might be used in combination with the Superfund program to provide additional cleanup authorities or strategies to augment a Superfund cleanup. These coordinated approaches have been used at a number of Superfund sites, such as the Grand Calumet cleanup [Ashtabula River? [other examples?](#)], and are being considered under EPA's Urban Rivers Initiative. To the extent that such approaches do not compromise cleanup standards, liability, or community participation, they can be an important element of ensuring that all available resources are leveraged to achieve effective cleanups.
- Some programs might provide a viable alternative administrative framework under which cleanup activities at a site could be appropriately overseen or enforced. For example, Superfund already has a policy of deferring responsibility for cleanup to the RCRA corrective action program where that program applies. Use of a non-NPL program to oversee or enforce cleanup might also be appropriate where cleanup will be funded by PRPs and a state program can provide appropriate oversight of the PRP cleanup. Again, to the extent that non-NPL programs can appropriately oversee cleanup of NPL-eligible sites and have the capacity (staff and resources) to carry out this oversight, the Subcommittee believes these are important alternatives, and their use will allow Superfund resources to be directed only toward sites where they are most needed.

In 2002, in response to questions posed by this Subcommittee, EPA surveyed the regional offices about their efforts to consider other programs during the site screening and assessment process. All ten EPA regional offices confirmed that they convene meetings of a regional Decision Team or similar body to coordinate evaluation of which sites most need to be addressed using the NPL and which might be appropriately addressed using a non-NPL cleanup program. However, the programs considered and the methods and

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1 nature of this analysis can vary significantly among regions. While all ten EPA regional
2 offices indicated that they routinely consider removal actions, the Superfund Alternative
3 Site approach, other EPA authorities and programs (e.g., RCRA corrective action), and
4 all possible state remediation programs before making a commitment to formally propose
5 a site for NPL listing, only nine regions reported routine meetings with state program
6 managers to coordinate cleanup priorities. Seven regions reported similar meetings with
7 the Superfund removal program, and three regions report routine meetings with other
8 EPA programs such as the RCRA corrective action program. Regions also report that
9 they consult informally with these programs before proposing a site to the NPL. Eight
10 regions report that they also consider other Federal agency response programs, such as
11 the programs put in place by the Department of Defense and the Department of the
12 Interior, before proposing a site to the NPL.

13
14 In implementing this recommendation, EPA should establish guidelines for consideration
15 of other programs so that all regions consider appropriate non-NPL cleanup programs for
16 NPL-eligible sites, and so that programs are considered at appropriate points in the listing
17 process. The Subcommittee considered, but ultimately rejected, recommending a more
18 formal mechanism for coordination, such as a “coordinating committee.” Instead, the
19 Subcommittee favors an approach that achieves the outcomes of coordination, but leaves
20 to EPA regional offices and their partners the responsibility of determining the best
21 means to achieve those outcomes given regional-specific circumstances. It seems likely
22 that the most efficient means for EPA to accomplish the coordination outcomes
23 recommended by the Subcommittee is through improvements to the existing regional
24 infrastructures for coordination, rather than through establishment of a new standard
25 mechanism.

26
27 EPA should also ensure that accurate, up-to-date information about the strengths,
28 weaknesses, and capabilities of other federal cleanup programs that might complement
29 Superfund is available to the states, regions and other interested parties, along with
30 support for regional project managers who wish to consider coordination or collaboration

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1 with such programs. This will assist regional offices in determining which non-NPL
2 programs might be most appropriate to consider for a specific site and in making
3 determinations as to how a non-NPL program might be used in a way that doesn't
4 compromise cleanup levels, liability, or community participation.

5
6 As with the discussion of coordination, above, the Subcommittee emphasizes that EPA
7 should not allow consideration of non-NPL cleanup programs to delay a listing decision
8 when it is clear that the NPL is the most appropriate cleanup method to use at a site. EPA
9 retains sole discretion to make decisions about which sites to list on the NPL and these
10 recommendations are not intended and should not be interpreted as fettering that
11 discretion. The Agency has a responsibility to make listing decisions in a timely and
12 efficient manner, in accordance with promulgated procedures and based on credible
13 technical evidence.

14
15 *[Text box: Other Programs Discussed by the Subcommittee:*

16 *Prevention Programs –Keep sites from needing Superfund level cleanup*

17 **RCRA Subtitle C** – Program implemented by authorized states at permitted
18 hazardous waste treatment, storage and disposal facilities. Facility
19 owner/operators address releases and perform “corrective action” on past releases
20 of waste on site.

21 **RCRA Subtitle D** – Program implemented by authorized states at permitted
22 municipal solid waste facilities. Owner/operators address releases to all media,
23 including corrective action as needed to preclude groundwater contamination.

24 *Funding Programs – Provide some amount of funding for non-NPL sites*

25 **Brownfields** – Provides technical assistance and funding to states, tribes, local
26 government, and communities for cleanup and re-development of contaminated
27 industrial properties that are not on the NPL.

28 **HUD BEDI** – Provides flexible funding directly to local governments to conduct
29 economic development or affordable housing projects on non-NPL sites.

30 Specifically targeted to low-income communities.

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Categorical Programs – Able to address specific category (e.g., mining)

SMCRA – State-delegated program, funded through a coal production tax, which regulates active surface mining operations and provides for the control, abatement and reclamation of abandoned coal and noncoal mine sites.

CWA – State-delegated programs with multiple components used to protect surface waters, including authorities to encourage corrective action and remediation. Includes funding options through revolving load fund.

WRDA – Provides funding on a site-specific basis for cleanup of contaminated sediments at sites located in or near waterways. Currently includes pilot program to restore degraded urban rivers.]

[Text box: ***State Programs***

Virtually every state has some form of cleanup program; many have multiple components, including brownfields programs, voluntary cleanup programs, property transfer programs, and programs modeled after the federal Superfund program. State cleanup programs are an important piece of the cleanup puzzle and serve as a complement to the national Superfund program. While there exists a range of cleanup approaches, strengths, weaknesses, and capacities across state programs, collectively state programs have addressed many thousands of contaminated sites – including some NPL-caliber sites – and it is expected states will continue to do so.

States' nearness to and understanding of the problems associated with contaminated sites has the potential to improve the efficiency and responsiveness of remedial decision making. This strength, however, also has the potential to be a weakness, as this very nearness may make decisions-makers vulnerable to undue political influences.

Many Subcommittee members had direct experience with various state programs and felt that EPA should consider a study to evaluate both the strengths and weakness of state-specific approaches and to consider the relevance of these approaches to the federal Superfund program.

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1
2 **Potential Good Practices** – Many states develop specific approaches and innovations
3 with the potential to be transferable to other programs. While the Subcommittee lacked
4 the time to evaluate the range of practices within the state universe, several types of
5 practices were identified as elements that might warrant further evaluation for
6 strengths/weaknesses and transferability. These include:

7 **Third-Party Certification for Cleanup Oversight** – Massachusetts established the first
8 third-party certification program that uses “Licensed Site Professionals” or (LSPs) to
9 oversee responsible party cleanups. Environmental professionals are licensed by the state
10 to oversee cleanups, and act as both consultants to responsible parties and as
11 representatives of the state where they are licensed. The states have developed
12 safeguards in their regulations to prevent conflicts of interest. Responsible parties enjoy
13 faster turnaround in getting assessments, studies and plans approved, and the states enjoy
14 significant cost savings in reduced staffing requirements for cleanup oversight.

15 **Streamlined Approval Processes** – Several states have incorporated streamlined
16 processes for reviewing and approving site assessments and cleanup plans to reduce
17 cleanup delays caused by multiple reviews and long turnaround times. Tennessee offers
18 a “FAP Process” that approves remedial action plans for a facility for a full year,
19 dispensing with lengthy plan and report submittals and reviews. Texas’ Risk Reduction
20 program allows a responsible party to move ahead with investigation and cleanup of solid
21 waste management units with approvals required at only key points in the decision
22 process. Pennsylvania authorizes the submission of all site documentation of cleanup at
23 the end of the remedial process for certain types of sites. New Jersey allows streamlined
24 procedures and reduced oversight for industrial establishments that have undergone and
25 environmental review.

26 **Tiered Approach for Selecting Cleanup Goals** – A number of states have adopted this
27 concept, which allows the state and responsible party to select cleanup goals for a site
28 based on site-specific risk assessment information and the reasonably expected future use
29 of the site. Most states implementing this approach use three tiers: Tier 1 makes use of
30 very stringent generic cleanup levels in “look-up tables” that are based on conservative

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1 assumptions about exposure and risk, Tier 2 makes use of more site-specific information
2 in modeling likely exposure and risk, Tier 3 uses a full site-specific risk assessment to
3 determine protective cleanup levels. States that are effectively using this approach
4 include, but are not limited to Pennsylvania, Illinois, Massachusetts, Michigan, and
5 Texas. The Federal Underground Storage Tank (UST) Cleanup program also promotes
6 this tiered approach to selecting cleanup goals.

7 **Public Participation** – Some states have incorporated tiered public participation
8 requirements based on the site specificity of the cleanup levels used. Where generic
9 background or statewide standards are used to set cleanup levels, the public participation
10 requirements are more streamlined. If site-specific cleanup goals are selected using a site
11 assessment that incorporates localized factors regarding exposure and risk, then more in-
12 depth public participation requirements and a community involvement play are required.
13 Examples of states using this approach are Pennsylvania and Ohio.

14 **Groundwater Management Zones** – A number of state programs allow for site-specific
15 classification of groundwater use based on current and reasonably expected groundwater
16 use. This avoids the indiscriminant use of drinking water standards as cleanup goals for
17 aquifers that will never be sources of drinking water. Some states allow for land use
18 controls that specifically restrict the use of groundwater within a defined zone (e.g., under
19 a heavily urbanized area with much historic contamination). These restrictions coupled
20 with risk-based cleanup levels allow for much faster cleanup and redevelopment of
21 brownfields sites. Example states are Pennsylvania, Texas, Ohio, and New Jersey.

22 **Conceptual Site Models** – Many states use the conceptual site model as a tool to avoid
23 unnecessary and time-consuming site analyses. The tool allows site managers to focus on
24 the end use of the site to set appropriate cleanup goals and tailor needed analyses to
25 planned remediation. The site model allows for enhanced community input related to
26 historic contamination, likely exposure pathways, and future intended uses of the site.

27 **Pay for Performance** – Several states, notably Florida, have implemented an approach
28 that pays a responsible party for rapidly completing assessments and remediation
29 projects. They have apparently been limited to state underground storage tank cleanup
30 programs.

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1 **Closed Landfill Program** – Minnesota has created a special program for closed
2 municipal waste landfills that has been very effective in funding and conducting landfill
3 cleanups. The program is known for innovative use of in-situ and phytoremediation
4 technologies and is notable for creating submerged wetlands.

5 **O & M Monitoring** – Wisconsin is considering altering its management of the O & M
6 phase of remediation to better leverage permitting staff and enhance the reliability of its
7 monitoring function. The state is discussing shifting sites with construction complete to
8 the programs that oversee active facilities with the same wastes (e.g., solid waste landfills
9 to the Solid Waste department, hazardous waste facilities to RCRA, pesticide sites to the
10 Department of Agriculture). This allows the remedial program to focus on program
11 orphans.]

12
13 *[Text box: Capacity Building at the State Level]*

14 The Subcommittee considered a great deal of information on the range of cleanup
15 programs among the states, including the Environmental Law Institute's Analysis of State
16 Superfund Programs, 2001 Update, a compendium of statutes, program organization,
17 staff, funding, cleanup standards and activities, enforcement provisions, and amount of
18 money spent on cleanup for all 50 states.

19
20 Given the array of individual state capacities, and the need to understand the challenges
21 faced by state programs (e.g., declining state budgets in times of great fiscal constraint,
22 undue influence of local concerns on cleanup decisions), the Subcommittee urges EPA to
23 continue its efforts to build the capacity of state remediation programs.

24
25 While states do not have the resources to pay for cleanup at most NPL-caliber sites,
26 building capacity within state programs to continue to fund cleanup at smaller, lower-risk
27 sites and to oversee PRP-lead cleanup is essential to maintaining a strong national
28 cleanup program. Using information available in the ELI report, EPA should evaluate
29 and consider ways to build capacity in states that have:

- 30 • A significant number of unaddressed or unevaluated sites;

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- Insufficient cleanup programs; or
- Ineffective use of enforcement authorities or prevention programs.]

Recommendation 6: EPA should work with its partners to review application of the populated areas and appropriately considers environmental justice concerns, traditional lifestyles, vapor intrusion, and explosive hazards, and (2) accurately estimates threats based on application of available site-specific data rather than the standard pathway assumptions.

The Subcommittee was not charged with evaluating the HRS and therefore did not carry out a detailed assessment of how the HRS currently is functioning, and is not making recommendations related to the 28.5 HRS scoring cut off or the HRS model. At the same time, because the HRS is the way in which EPA most often defines which sites are eligible for NPL listing, the Subcommittee felt it was appropriate to discuss the HRS during their deliberations on the use of the NPL and the NPL listing process.

The Subcommittee recognizes that the HRS serves a specific and limited function in the Superfund Program. The use of the HRS does not result in a risk assessment and was not designed to result in a risk assessment. Risk assessments are carried out after sites are listed, during the cleanup process. Rather, the HRS is a screening tool that assigns certain numerical values to a variety of exposure characteristics known or assumed to be associated with a site. It is designed to be conservative, and while Subcommittee members had a range of views as to whether the HRS was too conservative or not conservative enough, all recognized that it is designed to delineate a set of sites that EPA will further screen for consideration for the NPL. Sites with an HRS score of 28.5 or greater are eligible for the NPL – they are not automatically listed and, indeed, many sites that score 28.5 are not listed. Rather, the HRS defines the pool of sites that are eligible for the NPL, that pool of sites is then further screened by EPA and only certain sites are

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1 proposed. (See recommendation 1, above.) During the HRS scoring process, once an
2 evaluation of one or more of the critical site exposure pathways results in a score of 28.5
3 or above, EPA generally does not invest the resources in completing calculations for all
4 pathways to determine how high the site score should be. It is interesting to note that
5 because of this practice (which is a legitimate resource saving technique), HRS scores
6 cannot be used to compare the relative degree of risk among NPL sites and cannot be
7 relied upon to make judgments about the total amount of risk posed by individual sites.

8
9 The Subcommittee noted that EPA has, and routinely exercises, the discretion not to list
10 NPL-eligible sites (i.e., sites with an HRS score of 28.5), so that a less than perfect
11 application of the scoring system has the potential to be corrected in EPA's exercise of its
12 discretion relative to listing decisions. On the other hand, if a site does not score 28.5 or
13 above using the HRS, EPA generally is unable to consider it for NPL listing.

14
15 Subcommittee members identified a number of concerns related to implementation of the
16 HRS. Some Subcommittee members expressed concern that limitations of the HRS as
17 implemented may preclude NPL listing of sites that pose legitimate and serious risks to
18 humans and the environment and that warrant national attention under Superfund. Other
19 Subcommittee members had concerns about the opposite problem, that application of the
20 HRS may result in listing of sites that do not truly pose the types of legitimate, significant
21 risks to humans or the environment that the Superfund program was designed to address.
22 Some Subcommittee members suggested that layers of conservatism built into the HRS
23 default assumptions result in unreasonably conservative listing decisions. Other
24 Subcommittee members asked whether the HRS appropriately balances real and present
25 danger with potential future risks, by giving the same weight to both circumstances.

26
27 The Subcommittee discussed that many of the other reforms it is suggesting, such as
28 earlier involvement of affected communities and potentially responsible parties, will
29 likely improve HRS scoring by bringing more information to the table earlier in the site
30 screening and assessment process. At the end, the Subcommittee recognized that as a

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1 screening tool the HRS must cast a wide net and will likely remain imperfect. At the
2 same time, Subcommittee members identified a number of very specific concerns about
3 HRS implementation and suggestions for improvement as follows.

- 4
5 ▪ Does implementation of the HRS adequately address sites where the primary risk
6 is due to vapor intrusion?
7
- 8 ▪ Does implementation of the HRS adequately account for environmental justice
9 issues?
10
- 11 ▪ Does implementation of the HRS adequately enable EPA to list sites that are not
12 located near major population areas?
13
- 14 ▪ Does implementation of the HRS adequately address explosive hazards?
15
- 16 ▪ Does implementation of the HRS adequately enable EPA to list sites that pose a
17 threat to exposed individuals with traditional lifestyles?
18
- 19 ▪ Does implementation of the HRS adequately consider real site-specific data to
20 reflect actual site conditions?
21

22 With respect to vapor intrusion, the Subcommittee supports EPA's current investigation
23 of the prevalence and seriousness of vapor intrusion at sites currently listed on the NPL.
24 As this evaluation yields data, EPA should consider whether vapor intrusion is a
25 significant enough issue at NPL sites to warrant a change in the HRS. In the meantime,
26 EPA should work with the Association of State and Territorial Solid Waste Management
27 Officials (ASTSWMO) to determine whether vapor exposure pathways can be addressed
28 adequately through the application of the HRS. If it is determined that the HRS is
29 sufficient, EPA should disseminate its findings through training and/or new or revised
30 guidance/policy directives so that all EPA regions, tribes and states understand that the
31 tool is available and how to use it. If it is determined that the HRS does not adequately
32 reflect risks from vapor pathways, EPA should work with states, tribal nations, and other
33 appropriate individuals to decide what steps to take to ensure that sites posing significant
34 enough risks via vapor intrusion are eligible for listing on the NPL.

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1
2 With respect to environmental justice, as with many other aspects of environmental
3 programs, it is not clear that the HRS adequately incorporates environmental justice
4 considerations. Many believe that socio-economically depressed areas are often
5 subjected to a greater proportion of environmental insult as a result of ongoing and
6 abandoned industrial and waste facility releases, and fewer redevelopment opportunities.
7 As a result, a community could be exposed to a number of sites, none of which score 28.5
8 but which together may pose greater risks to receptors than sites currently on the NPL.
9 In addition, genetics, inferior nutrition, and poor health care may all predispose
10 individuals to disease and other adverse effects. The HRS, as is typical with
11 environmental programs, does not incorporate such considerations; rather, it evaluates
12 releases in isolation. Although the Subcommittee acknowledges this issue, it has not had
13 the opportunity to thoroughly evaluate the components and arrive at a definitive proposed
14 resolution. Therefore, EPA should request that the National Environmental Justice
15 Advisory Committee (NEJAC) follow up on their current related efforts and help to
16 formulate policies which would ensure that predisposition to disease, as a result of
17 genetics, poor nutrition or health care and cumulative exposures from a disproportionate
18 number of contaminant sources, be considered in NPL listing decisions. Additionally,
19 EPA should convene an EPA/state/Tribal task force to formulate scientifically
20 supportable policies to address concerns identified by NEJAC related to NPL listing.

21
22 With respect to sparsely populated areas, EPA should undertake an investigation to
23 determine whether high risk sites are being screened out by the HRS because they are
24 located in sparsely populated areas. If so, a mechanism should be identified by which the
25 sites can be deemed eligible for the NPL and listed if appropriate. The Subcommittee
26 emphasizes that while CERCLA requires that the prioritization process take into account
27 to the extent possible the population at risk, it does not express an intention to protect
28 dense populations but not sparse populations. Should EPA's initial investigation of this
29 issue reveal that high risk sites are being screened from further consideration for the NPL
30 by the HRS because they are located in sparsely populated areas, EPA should convene a

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1 task force, including the relevant stakeholders to determine how to eliminate bias towards
2 heavily populated areas in the HRS.

3
4 With respect to explosive hazards EPA, with input from relevant stakeholders, should
5 determine whether it currently has the option of placing explosive hazard sites on the
6 NPL, and if not, whether such an option would expedite and improve the cleanup of such
7 sites. Meanwhile, EPA should address imminent and substantial dangers to the public
8 health or welfare posed by explosive hazards as removal actions. Explosive hazards
9 resulting from exposure to unexploded and other ordnance pose threats not only at
10 Federal facilities, which are not specifically addressed in this Report, but also at
11 thousands of formerly used defense sites, and other private party sites. These threats
12 currently are not addressed by the HRS.

13
14 With respect to traditional lifestyles, EPA should create a working forum with Tribal
15 associations, including Alaskan Natives and Hawaiian Islanders as wells as Native
16 American Indians, to develop reasonably anticipated exposure scenarios, and to
17 determine what regulatory actions need to be taken to ensure that such scenarios are
18 incorporated into listing decisions. The Subcommittee was briefed on traditional
19 lifestyles and recognizes that, at least in some cases, traditional and subsistence practices
20 of Tribal members are not sufficiently addressed in any aspect of the Superfund program
21 – from NPL decisions, to risk assessment, to remedy selection. In addition, although
22 traditional lifestyles tend to be associated with Tribal nations, they also can be important
23 in non-Tribal communities, particularly communities of color, where traditional religious
24 practices are predicated on use of the natural environment.

25
26 With respect to consideration of real site-specific data, EPA should supplement HRS
27 scores calculated using the standard pathway models with a more data-intensive
28 additional screen that would better reflect site conditions. In this screen, data would be
29 considered on a site-specific basis to clarify such HRS default assumptions as fish
30 consumption, likely contaminant receptors, etc. A process by which the affected

communities and potentially responsible parties at sites can prove available could be used to cure the deficiencies with the HRS's uniform incorporation of a series of default assumptions that have been cited by both community groups and responsible parties. This enhanced use of site-specific data during interpretation of the HRS score would improve the accuracy of the additional screening and assessment of NPL-eligible sites, and would avoid EPA having to modify the standard default HRS pathways, which are established in large part by regulation.

How Should EPA Set Priorities Among Listed Sites?

As discussed earlier in this report, the continual short-fall of resources available at the remedial action phase of cleanup is creating untenable pressures on the agency to fund certain activities and leave other contaminated areas unaddressed. While Subcommittee members have a range of views about the cause of this short-fall and the best ways to address it, all agree that more resources should be available for remedial actions. (See recommendations 8 – 10, later in this Report.) In this context, the Subcommittee makes one recommendation on setting priorities among listed sites, below.

Recommendation 7: EPA should implement a rigorous, transparent process involving assigning priorities for allocation of funding for fund-lead actions.

[This incorporates both the prioritization ideas discussed and subsequent to the September meeting and the idea of prioritizing some areas of a site separately from other areas (the OU concept) that was formerly addressed in a separate recommendation.]

Any site listed on the NPL is by definition a national priority, and should be cleaned up in a timely fashion. Prioritizing among such sites creates a Hobson's choice as the selection any site or activity for action means another will remain a significant threat to human health and the environment. Such prioritization raises troubling, value-laden questions that are most appropriately addressed in an open policy forum, and not behind the closed

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doors of an administrative agency. The Superfund statute itself, which reflects the policy considerations of the legislative body, does not provide guidance for the types of questions facing the agency. In the abstract, these questions include among many others: Is it more important to fund an activity that addresses an ongoing health threat to one family or an activity that would prevent further contamination of a sensitive ecosystem or resource, such as a potable water supply? Does it matter if the health threat is acute or chronic, or if the sensitive ecosystem is home to endangered species? How many families does it take to be more important than one ecosystem? How large or important an ecosystem to be a higher priority than one neighborhood? The only responsible answer is that they are all important – and the Subcommittee was unwilling to recommend a system that would prejudice what must continue to be very difficult choices that can be made only after a thoughtful, well-informed evaluation of site-specific data.

At the same time, the Subcommittee recognizes the practical reality that under any funding scenario, and difficult as it may be, EPA likely will continue to have to set priorities for spending at NPL sites. The Subcommittee therefore offers the following principles to guide this process.

- Priority setting is about deciding which remedial actions to fund first. It is not about re-defining cleanup outcomes. All NPL listed sites must be cleaned up so that humans and the environment are fully protected as required by law.
- Considerations for remedial action prioritization may differ from those applied to removals. For example, a removal action to provide an alternate water supply to individuals currently exposed to significantly elevated levels of contamination may be a very high priority for the removal program; however, the restoration of the contaminated aquifer may rank lower than prophylactic or other remedial measures that could be taken elsewhere where exposure pathways cannot be intercepted.
- The primary question EPA should evaluate when considering priorities for funding is “what is the consequence of delaying remedial action?” While this

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question may be implied in EPA's current prioritization process to some extent, the Subcommittee believes it is necessary for the Agency to consider it explicitly, and weigh the consequences thoughtfully at each site. In some cases, such implications could be on-going unacceptable risks; in others, delay could result in migration and vastly greater and more significant contaminated natural resources, and greater risks to future populations to whom we owe a duty equal to that owed to current exposed populations; in differing degrees depending on the particulars of the site and remedy, parceling and delay of remedies means increased costs and therefore fewer resources available to address other sites, or greater costs to society as a whole. All of these implications must be considered in deciding priorities.

- No prioritization process should assume its outcome. While as a practical matter it may be rare that threats to a sensitive ecosystem would be given a higher priority than ongoing threats to humans, such an outcome is theoretically possible depending upon the facts presented.
- Prioritization should be carried out remedial action by remedial action. EPA's current practice is to prioritize remedial actions, not entire releases, or sites. Thus, one remedial action at one site may rank as a high priority and be provided with funding while others at the same site wait for later funding cycles. The Subcommittee concurs with this practice, which can be particularly important at large, complex sites with discrete remedial activities.

In this context, the Subcommittee endorses the following factors to be considered when EPA is setting priorities for funding. In large part, the factors are drawn from EPA's current priority setting practice as outlined in the [cite Laws memo], with additional specificity and detail recommended by the Subcommittee.

Factors Related to Threats to Humans and the Environment

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- 1 ▪ Source control: remedial actions that result in control of ongoing sources of
2 contamination are particularly important because of their potential to reduce
3 overall cleanup burdens and costs.
- 4
- 5 ▪ Risks to human population exposed: including population size, proximity to
6 contaminants, likelihood of exposure.
- 7
- 8 ▪ Stability: mobility of contaminant(s), site structure and effectiveness of any
9 institutional or physical controls.
- 10
- 11 ▪ Contaminant characteristics: concentration, toxicity, and volume.
- 12
- 13 ▪ Threat to a significant environment: including endangered species or their critical
14 habitats, sensitive environmental areas. Where not addressed through evaluation
15 of more direct human pathways, this should include consideration of the intrinsic
16 and future value of impacted natural resources, such as ground water and
17 fisheries.
- 18
- 19 ▪ Cultural and socio-economic factors: including environmental justice and reuse
20 potential to improve local communities. At sites that affect Tribal interests,
21 treaties, statutory requirements (e.g., American Indian Religious Freedom Act)
22 and trust responsibilities should be considered. These factors are important
23 irrespective to the role they play in risk assessment.
- 24

25 Factors Related to Program Management

- 26
- 27 ▪ Weigh short- and long-term implications. Although it may be a way to manage
28 annual spending, a focus on controlling sources and addressing current human
29 exposures does not obviate the need to address other risks. On a site-by-site basis,
30 taking more time to complete cleanups will result in an increase in overall cleanup

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costs and increased social and opportunity costs to communities, which must longer tolerate contaminated sites even as they are not experiencing current exposures. This overall cost increase at individual sites and in individual communities must be balanced against the dilemma that, particularly in a climate of limited resources, the costs of failing to adequately address current exposures and ongoing sources at all sites may be untenable in terms of both adverse human health impacts and allowing cleanup burdens to grow. In some cases, the cost savings of rapid action may be dramatic, if it prevents migration of contamination to, for example, additional media, cultural resources, additional receptors, or sensitive ecosystems. Evaluations of short- and long-term implications should consider life-cycle costs related to implementation versus postponement of planned activities, and any cost savings that might be achieved by reduction in routine management costs associated with maintenance of interim actions or other controls that might be in place in advance of cleanup.

- Minimize costs associated with mobilization and demobilization for clean up. Cleanup strategies should maximize the use of skilled and knowledgeable workers, labs, cleanup contractors and managers with institutional memory. Work flow logic in connection with other activities planned or ongoing should also be considered.
- Maintaining a strong enforcement presence. One of the benefits of the Superfund program is that the mere possibility of a Superfund action may prompt responsible parties to initiate and fund clean ups, reducing burdens on the limited public funding available. Because these clean ups are often initiated and then overseen under state environmental remediation programs, a strong, vital Superfund program is also important in maintaining strong, vital state programs. For this benefit to continue, the threat of Superfund action must continue to be real. Consideration of this factor may cause EPA to elevate the priority of sites that,

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1 based strictly on an evaluation of threats, might present less concern than other
2 sites.

- 3
- 4 ▪ Making meaningful progress in communities that have been disproportionately
5 affected by environmental contamination.
- 6
- 7 ▪ Leveraging activities already funded by other programs. The ability to leverage
8 funding associated with other programs or activities might, because it could lower
9 overall costs to Superfund, justify the assignment of a higher priority to a site.
- 10
- 11 ▪ Advancing knowledge of innovative treatment technologies.
- 12
- 13 ▪ Support for cleanup from affected communities.
- 14
- 15 ▪ Support for cleanup from state and local governments and Tribal governments.
- 16

17 The Subcommittee anticipates that implementing a process that weighs these factors will
18 require EPA to make some changes, but will not radically alter the Agency's current
19 procedures.

20

21 While the Subcommittee was able to reach agreement on principles for prioritization and
22 on the set of factors to be weighed, they were not able to reach agreement on the details
23 of the prioritization process, including specific weighting, in the time available.

24

25 Some Subcommittee members were comfortable with the process currently used by EPA
26 under the Laws memo. In this process, each remedial action is given a weighted numeric
27 score on a scale of 1 to 1000, and the outcome of prioritization is a ranked hierarchy of
28 sites, from highest to lowest score. Other Subcommittee members believe that this
29 numeric approach fails to accurately reflect the extraordinarily complex and inherently
30 subjective process of selecting priorities. In addition, a number of members were

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1 uncomfortable with a model that precluded environmental threats from ever ranking as
2 high as a maximum score for human health risks. Although in reality human health
3 threats posed by specific sites may be deemed a higher priority than threats posed to
4 environmental resources, the statute does not support such a categorical preference, and it
5 is conceivable that an environmental threat could be of such import that its impact on a
6 critical ecosystem or natural resource, such as a fishery or potable water supply, would
7 outweigh an on-going human health exposure at another site. Conceptually, such a
8 judgment should not be foreclosed by a prioritization protocol.

9
10 The Subcommittee views these recommendations to be consistent with those in the
11 Federal Facilities Environmental Restoration Dialogue committee (FFERDC) which was
12 endorsed by a wide variety of interests, including states, local governments, tribes,
13 environmental justice communities, public stakeholders, federal responsible parties, and
14 regulators. Underlying the FFERDC recommendations was the insistence that the
15 prioritization procedures, analysis (including all site-specific inputs regarding risk
16 assessment and other factors), and results be completely transparent and understandable
17 to all stakeholders, including affected individuals; and furthermore, that the stakeholders
18 at the site should work with the EPA to identify the most important risk issues and other
19 factors that they believe would drive the priority ranking of their sites.

20
21 **How Should EPA Allocate Resources?**

22
23 Earlier in this report, the Subcommittee urged the Administration to request and Congress
24 to appropriate additional funds to allow EPA to make needed progress on the backlog of
25 remedy implementation work that is ready for funding at orphan sites. Whether or not
26 these funds are appropriated, it is critical for EPA to do everything it can to control its
27 own destiny by making the Superfund program a model of efficiency in spending the
28 human and financial resources it is given.

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The Subcommittee's recommendations on allocating resources are intended to help the Agency identify and capitalize on potential efficiencies. Recommendation 8 emphasizes that EPA should maximize the amount of CERCLA resources devoted to actual, on-the-ground cleanup activities. Recommendations 9 through 11 describe specific evaluations the Agency should undertake or practices it should institute to improve efficiency.

Recommendation 8: EPA should make on-the-ground cleanup activities the highest

Regardless of what the annual Superfund budget is, more of the money should be allocated towards cleanup in the field. Although the Subcommittee was unable to agree on a precise definition of "field cleanup" (some members thought the definition should be limited to construction and other elements of remedy implementation, others thought it should include site characterization and other pipeline activities that are necessary to support remedy selection and implementation) all agreed that work that is directly related to improving conditions at actual sites should be the overriding focus of the Superfund program and should be the lens through which the Agency views all its spending decisions. Program management and other activities are to serve the mission of improving conditions at actual sites – not the other way around.

The Subcommittee's specific recommendations on evaluating efficiencies and other improvements, below, are designed to help EPA identify what it can legitimately do less of in order to do more work in the field. However, EPA should not wait until the independent third-party review recommended below is complete before beginning to take action. The Agency should immediately make every effort to reduce overhead and carefully control expenditures, particularly those made by offices other than OSWER. EPA should make immediate efforts to assess the allocation of Superfund supported staff across the Agency, particularly in the office of the Administrator and the office of the Inspector General, and make changes where appropriate.

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Recommendation 9: EPA should commission a neutral, independent auditor to carry identify options for increasing operational or other efficiencies, or reprioritizing expenditures, to increase the amount of the Superfund appropriation that is spent for on-the-ground cleanup activities.

The Subcommittee believes that resources available to the Superfund program should be utilized as efficiently and effectively as possible; ideally the Superfund program should be a model of efficiency in government spending. Over time, increases in efficiency will both increase the resources available to EPA to direct towards on-the-ground cleanup activities (see Recommendation 7, above), and increase the trust that Congressional appropriators and others have in the ability of the Superfund program to spend money wisely.

Although the Subcommittee was briefed extensively by EPA officials on the Superfund budget and the Agency's spending, and found this information critical to its understanding of the Superfund program, the Subcommittee had neither the time, expertise nor the charge to undertake type of in depth budget and spending assessment contemplated by this recommendation. The Subcommittee also does not believe that EPA would be best served by attempting to undertake such an evaluation on its own. A neutral, independent, third party, familiar with the Superfund program and budget, should be commissioned to undertake this evaluation, supported by Agency staff. To further the evaluation, EPA should ensure that the independent third party makes a draft of the efficiencies assessment available for public review and comment and, as appropriate, incorporates public comments into the final assessment.

The Subcommittee is making a related recommendation in the Measuring Program Progress section of this report. Recommendation 21 calls for EPA to be evaluated on

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transparent and accurate program tracking information by preparing performance profiles. The Subcommittee believes that adherence with this recommendation, coupled with the independent assessment, will be valuable to the Agency in tracking and improving program performance.

Recommendation 10: EPA should use its understanding of non-NPL programs and optimize/leverage use of any available resources from these programs at NPL sites.

At or near some NPL sites there may be activities being independently undertaken by other agencies for reasons unrelated to cleanup that could, nonetheless, have a positive affect on cleanup activities if they were properly carried out and coordinated with Superfund. It is important for EPA to understand the scope and level of these activities, as well as establish and maintain contacts within these other programs, so that these opportunities could be identified early in the cleanup process.

In order to maximize both efficiencies and resources, EPA should work with these programs to leverage these activities to gain maximum progress towards cleanup and avoid duplication of effort. The example of how this leveraging might work most often discussed by the Subcommittee is normal dredging activities carried out by the US Army Corps of Engineers. If properly carried out and coordinated with Superfund, the mobilization of people and equipment associated with these activities could serve “double duty” by also being used to carry out dredging or other activities beneficial to a Superfund cleanup.

Another opportunity that offers high potential for collaboration with other programs, including non-federal programs, is the economic opportunities associated with re-development of sites. EPA should make an extra effort to look for leveraging opportunities for NPL sites at or near areas being considered for re-development.

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For these activities to be appropriate and complement a Superfund cleanup, standard protocols associated with these types of routine activities might need to be modified, at EPA's direction, to be consistent with the requirements of the Superfund program and within the context of the rules and regulations governing Superfund (e.g., management of dredged materials might be different).

For activities to be properly coordinated, improvements will be needed in a number of areas including:

- EPA's knowledge of these other programs and relationships with programs managers must be improved so that the Agency routinely finds out about activities that are planned at or near Superfund sites in a timely way in order to foster coordination of these activities with Superfund cleanup objectives.
- Other Agencies' knowledge of Superfund must be improved so they can more effectively plan their activities to be complementary to Superfund cleanup objectives. EPA should identify these other potential programs and make an effort to educate staff about the potential opportunities for and benefits of working together.

The Agency may wish to explore memoranda of agreement or other arrangements with non-NPL programs to ensure that EPA can play an appropriate role in decision making about activities that are planned for locations near Superfund sites.

Recommendation 11: EPA should explore the experience of other agencies and the the-ground cleanup activities are spent wisely and efficiently. Based on this exploration, EPA should identify and pilot test a number of contract reform initiatives,

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including, if appropriate, guaranteed, fixed-price remediation contracts; indefinite quantity with guaranteed minimums; and requirements contracts.

A significant portion of the Superfund budget, particularly the budget for site assessments and remedial actions, is spent through contracts, referred to by EPA as “extramural” spending. Because of the important role that contracting plays in the overall Superfund budget and, in particular to the budget for on-the-ground cleanup activities, EPA must explore and capitalize on opportunities to improve their contracting practices.

The Subcommittee has identified a number of potential contracting reforms that EPA might explore, as described below. Many of these contracting reforms have been used by other Federal agencies, such as the Department of Defense and the Department of Energy, and EPA should work with these Agencies to understand their experience with contracting reforms and use this information to improve EPA’s testing of contract reforms. In spite of the challenges noted with each of these contracting options, the Subcommittee believes there is merit to EPA seriously considering different contracting approaches and recommends that EPA evaluate these and other options.

Graduated Fixed Price Remediation (GFPR) contracts have been used by other federal agencies to procure services for cleanup work. GFPR contracts require the contractor to complete cleanup activities (including approval by the overseeing regulatory agency) at a guaranteed price by a date certain. The guarantees are supported by combinations of corporate guarantees and third party financial instruments such as insurance policies. In cases where insurance instruments have been used, the government, by its own estimates, has experienced faster completion times and substantially reduced costs in both direct and indirect costs. This has occurred because the contracts are structured to create economic incentives and penalties which are very motivating to the contractors, and using insurance provides a market-based quality assurance/quality control mechanism for a fixed price—as well as a financial assurance mechanism. In this way, both cost overruns and costs to manage the program are reduced because much of those costs and risks have been

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1 assumed by the private sector as part of the contract. However, to achieve such benefits,
2 funding must occur up front. (For more information, see Appendix E for a copy of a
3 PowerPoint presentation made by the Department of the Army Chief of Staff for
4 Installation Development to [audience], January 30, 2001).

5
6 Because up-front funding is needed, GFRP contracts may be most difficult to use where
7 they would create the greatest value—for large cleanups—unless significant provisions
8 related to future funding failures could be added to the contract which differ from
9 traditional termination for convenience terms. Guarantees may be void where work is
10 stopped mid-way, since the delay of projects often actually causes cost overruns.

11
12 Indefinite quantity contracts with guaranteed minimums can be let for any kind of service
13 and are regularly used by the Army Corps of Engineers to obtain volume discounts. The
14 contracts typically require unit prices, such as hourly rates or volume- or quantity-based
15 price declarations. The key to making such contracts result in cost savings is geographical
16 aggregation. If a contractor can avoid mobilization costs for people or equipment,
17 substantial savings can be realized. For waste disposal contracts, guaranteed flow into a
18 site permits better planning and cost efficiencies to occur. Unfortunately, the
19 geographical aggregation requirements run headlong into the political requirements or
20 expectation that funds be spread across the country so as not to concentrate or limit the
21 benefit to one locality or region. Further, as with GFPR, these contracts require both the
22 Agency and the contractor to perform. Unlike traditional time-and-materials contracts, if
23 the Agency were to cancel early before minimums were achieved, cost savings may be
24 lost.

25
26 Requirements contracts, in which the Agency promises all of the particular type of work
27 to one provider might be explored where the work to be performed could be primarily
28 performed at the offices of the provider. For NPL sites, this might include certain
29 specialty data analyses or types of assessment. Again, volume should beget a discount to
30 permit the Agency to do more with less.

**How Should EPA Make Decisions about Site Screening,
Assessment and Listing More Transparent?**

EPA is responsible for making difficult choices throughout the process of identifying potential NPL sites, site screening and assessment, and ultimately site listing. The Subcommittee is concerned that these choices and their implications for other programs—particularly state environmental cleanup programs and potentially affected communities—are obscured by EPA’s largely internal decision-making processes. As described earlier in this report, EPA completes assessments at approximately 400 potential NPL sites²⁴ per year. The states and regional offices recommended an average of 50 sites per year as NPL-candidates and EPA proposed for listing on the NPL an average of 27 sites per year. The Agency lists over 95% of the sites it proposes.²⁵ These figures make it clear that the truly difficult choices the Agency faces in identifying sites for NPL-listing occur outside the public view, that is, before the formal, open process associated with an NPL proposal. While the Subcommittee recognizes and affirms that EPA and their partners in state environmental agencies, local governments, and Tribal governments must have the ability to exercise professional discretion and wisely use limited public resources, they should not continue to exercise this discretion in a vacuum and they have a responsibility to ensure that the implications of their decisions are understood by those who are most affected by them—namely the communities around potential NPL sites, the PRPs who are responsible for cleanup, and the state and Tribal environmental programs to which communities and PRPs will likely turn when a potential NPL site does not make it to the NPL.

The Subcommittee’s recommendations on increasing transparency are intended to bring a responsible level of transparency to the Agency’s decision making, while, at the same

²⁴ Average of annual PA and SI completions. [Can we come up with a more accurate number?](#)

²⁵ Number of NPL sites + sites deleted + sites still proposed = total sites, with sites listed + deleted expressed as a percentage of total sties, based on Sept. 2002 numbers. [Need to check/update.](#)

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time, preserving the Agency's discretion. Recommendation 12 describes an annual reporting process that could be used to summarize Superfund decision making. Recommendations 13 and 14 call for EPA to become more consistent and informative in its communication of Superfund decisions about specific sites.

Recommendation 12: EPA should publish an annual report that presents information [getting language (Congressional report?) describing report EPA used to publish].

Recommendation 13: EPA should establish standard protocols to ensure that regional parties, and other appropriate individuals in writing about available information on site conditions and current and potential future threats to humans and the environment when sites are dropped from the Superfund site assessment process based on a determination that no further remediation is needed under Superfund (NFRAP sites) or for other reasons.

During the Superfund Site Assessment process, the majority of sites considered for listing on the NPL are screened out for various reasons. Most often this occurs because sites are not eligible, that is, EPA determines that they would not achieve an HRS score of 28.5. Sites that are eligible for the NPL may also be screened from further consideration. For example, a site might be screened out because it can be appropriately addressed under a non-NPL cleanup program, such as the RCRA Corrective Action Program, or because PRPs enter into a voluntary agreement to carry out the cleanup either under the Superfund Alternative Program, or, more commonly, under a state environmental remediation program. EPA also might choose not to continue to evaluate an NPL-eligible site for action under Superfund, for example, if the default assumptions used in the HRS model are not consistent with actual site-specific conditions or based on

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1 evaluation of the immediacy and significance of threats and potential threats posed by the
2 site and the number and types of receptors (humans and environmental) that may be at
3 risk.

4
5 Generally, sites that are screened from further assessment in these ways are reflected in
6 EPA's Superfund information tracking system (CERCLIS) as "No Further Remedial
7 Action Required Under CERCLA" or "NFRAP." Sometimes, particularly in the case of
8 NPL-eligible sites, sites that are screened from further assessment are not reflected as
9 NFRAP and instead are informally tracked by the EPA regional offices for further
10 consideration in the future.

11
12 Although these sites either do not present a level of risk that warrants further
13 consideration for the NPL (i.e., they would not achieve an HRS score of 28.5 or are
14 otherwise screened out by EPA) or have been judged by EPA as being adequately
15 addressed by another program or otherwise not requiring listing, they also typically are
16 not "clean." That is, some environmental contamination is present even if it doesn't rise
17 to the level of being a national priority under Superfund. While the Subcommittee
18 recognizes that it is important to minimize further expenditure of Superfund resources at
19 these sites, it is also concerned that sites screened from further assessment under
20 Superfund may be misconstrued by some as being "clean" even when site conditions still
21 pose threats to humans and the environment. EPA must ensure that it communicates
22 clearly with state environmental agencies, Tribal governments, potentially affected
23 communities, and known PRPs about the status of sites that are screened from further
24 consideration under Superfund. This includes sites that are formally reflected as NFRAP
25 in CERCLIS and sites that are informally screened out at the regional office level.
26 Communication should be in writing, state explicitly that the site has not been determined
27 to be clean, and include available information on the types of contaminants likely to be
28 present at these sites, environmental media affected, and potential receptors.

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Recommendation 14: In the event that an NPL candidate site (a site that scores 28.5 or is not proposed for NPL listing, EPA should establish standard protocols to ensure that regional offices inform states, Tribal nations, affected communities, potentially responsible parties, and other appropriate individuals in writing about available information on site conditions and current and potential future threats to humans and the environment. EPA should keep a publicly available list of such sites and ensure that they are tracked and appropriately reconsidered for proposal for listing during future listing cycles.

In some cases, sites that make it through the Superfund Site Assessment process, are eligible for listing on the NPL, and are recommended as NPL-candidate sites by the EPA regional offices (i.e., are recommended by the regions for proposal to the NPL), are, nonetheless, at EPA's discretion, not proposed for listing. In the past, this was a rare occurrence. Provided the HRS scoring package and documentation was adequate, typically the vast majority of NPL-candidate sites sent forward by regional offices were proposed to the NPL in the same listing cycle in which they were sent forward.

In recent years, EPA has instituted a procedure to review all NPL-candidate sites at the national level (the national-level NPL-candidate site review panel) and increasingly has been delaying listing of NPL-candidate sites. This procedure and its implications are described more fully earlier in this report, where the Subcommittee recommends that EPA stop routinely delaying the listing of NPL-candidate sites and, instead, make a number of improvements to the screening process designed to improve the quality of the lists of NPL candidate sites that regions send forward. The Subcommittee believes, therefore, that future delaying of listing of NPL-candidate sites will be rare; at the same time, it recognizes that the Assistant Administrator for Solid Waste and Emergency Response has the final responsibility to make decisions about which sites to propose to the NPL and in any given listing cycle may choose to delay an NPL-candidate site for

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1 legitimate reasons. For example, site circumstances occasionally may change in a
2 significant way after an NPL-candidate site is sent forward; this has been the case where
3 PRPs step forward to begin and fund cleanup of an NPL-candidate site voluntarily.

4
5 While the Subcommittee recognizes and affirms EPA's need to exercise professional
6 judgment and discretion in selecting which sites to propose for listing on the NPL, it is
7 troubled by the lack of transparency in this decision making. As discussed earlier in this
8 report, in most cases, NPL-candidate sites are sent forward only after other cleanup
9 avenues have been exhausted—previous Subcommittee recommendations (see
10 Recommendation [numbers]) will strengthen this by involving other parties earlier in the
11 site screening and assessment processes and by increasing the understanding of non-NPL
12 programs and information on these programs available to regional offices. When sites
13 that regional offices judge cannot be adequately addressed by a non-NPL program score
14 of 28.5 using the HRS model (i.e., are eligible for the NPL), yet are not listed, EPA has a
15 responsibility to assure that adequate protection of human health and the environment
16 does occur. As described earlier in this report, the NPL is a critical national safety net in
17 these cases, and EPA cannot pretend that its decisions to not list NPL-candidate sites will
18 somehow change the fundamental equation that caused the sites to be sent forward for
19 listing in the first place.

20
21 If NPL-candidate sites are not proposed for listing, EPA must communicate clearly with
22 state environmental agencies, Tribal governments, potentially affected communities, and
23 known PRPs about the status of NPL-candidate sites that are not proposed for listing. As
24 with sites screened from further consideration earlier in the site assessment process (see
25 Recommendation 11, above), communication should be in writing, state explicitly that
26 the site has not been determined to be clean, and include available information on the
27 types of contaminants likely to be present at these sites, environmental media affected,
28 and potential receptors. In addition, because of EPA's special responsibilities related to
29 NPL-candidate sites, the Agency must keep a list of candidate sites it chooses not to

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1 propose for listing, monitor these sites so they will understand if site conditions change,
2 and reconsider sites in future listing cycles.

3
4 The Subcommittee emphasizes that, except for in cases where PRPs or others step
5 forward to initiate and fund cleanup, it has no expectation that NPL candidate sites will
6 be addressed by other environmental remediation programs in a timely way, because the
7 availability of other programs to appropriately compel or oversee remediation activities is
8 considered by regional offices during the site screening process and, if another program is
9 available and appropriate, sites generally are sent to that program rather than to the NPL.
10 This practice, which exists already, will be strengthened through implementation of the
11 Subcommittee's recommendations on improvements to the site screening and assessment
12 process. EPA cannot pretend it is solving problems at NPL-candidate sites by referring
13 them back to the very state environmental agencies that sent the sites forward to be
14 considered for the NPL in the first place. As described earlier in this report, in situations
15 where NPL-candidate sites remain unaddressed, the Subcommittee believes that failure to
16 propose an NPL-candidate site to the NPL after the site has been considered in three
17 listing cycles would constitute an arbitrary and unreasonable delay in EPA's exercise of
18 its responsibilities under CERCLA, potentially subjecting the Agency to citizen or other
19 suits to compel listing decisions.

20

IV. Mega Sites

The Subcommittee was specifically charged with considering and providing recommendations related to management of large, complex and costly cleanups, often referred to as mega sites. Subcommittee members had very divergent views about the implications of mega sites for the Superfund program. As a result, this section of the report presents both consensus recommendations and describes alternative views regarding how the mega site issue should be most effectively managed. This section provides background on the mega site issue, summarizes the broad policy options considered by the Subcommittee, outlines alternative scenarios for the Agency to consider as it addresses mega sites in the future, and proposes a set of recommendations related to the management of mega sites for EPA to consider.

Part 1: Background and Context

Please note that while this section has been reviewed by EPA, some portions have not yet received the in-depth review warranted and thus this background and context section is subject to further revision.

We have included this background and context information at this level of detail in this draft because it has not been reviewed previously by the Subcommittee. It may be appropriate to cut down the length contained in the body of the report and move a portion of the material to an Appendix – We will be looking for the Subcommittee's guidance.

Defining the Problem

Mega sites are currently defined as sites where total cleanup costs (i.e., combined extramural, actual and planned, removal and remedial action costs) are expected to exceed \$50 million incurred by either the Superfund program or by PRPs.²⁶ The

²⁶ For CERCLIS reporting purposes, as presented in OSWER Directive 9200.3-14-1G-Q (April 7, 2003), sites are defined as megasites if any combination of remedial action costs, excluding long-term remedial actions, exceeds \$50 million.

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1 designation may apply to any federal or non-federal facility, as well as any NPL
2 (proposed, listed, deleted) or non-NPL site. A site may be referred to as a *potential* mega
3 site if the expected costs of removal and remedial actions will be greater than \$50
4 million, but there is not yet documentation (e.g., obligations, decision documents, etc.) to
5 meet the \$50 million criteria²⁷.

6 There are currently 1,572 proposed, final, or deleted sites on the NPL. Of these, 177 (6
7 proposed; 158 final; 13 deleted)²⁸ are considered federal facilities²⁹ that include
8 abandoned mines, nuclear weapons productions plants, and landfills. The primary federal
9 agencies responsible for the 177 sites are the Department of Defense (80% of NPL
10 federal facility sites) and the Department of Energy (12%)³⁰. In general, EPA neither
11 counts, nor tracks, federal facilities as mega sites, primarily because cleanups at federal
12 facilities are not usually funded out of the Superfund program, but through other
13 mechanisms such as direct appropriations to responsible agencies.

14
15 **Size of the Problem**

16 Using the definition of current or expected cleanup costs exceeding \$50 million, there are
17 currently 128 confirmed mega sites on the NPL³¹ and 14 potential mega sites, for a total
18 of 142 mega sites, of which three are federal facilities³². Of these 142 sites, 56³³ (or
19 nearly 40%) were listed prior to 1986 and thus are considered pre-SARA sites,³⁴ a fact
20 which demonstrates the length of time it can take to cleanup these large, complex sites.
21 EPA is also aware of 13 sites it has identified as potential mega sites which are not
22 currently on the NPL (final or deleted status), but would probably be classified as mega

²⁷ Definition in PowerPoint presentation by Dr. Elizabeth Southerland to the NACEPT Superfund Subcommittee on November 5, 2003.

²⁸ EPA's Federal Facilities Restoration and Reuse Office: *Program Facts for Fiscal Year 2003*, data from CERCLIS on 10/14/2003, <http://www.epa.gov/swerffrr/documents/ffcc.htm>

²⁹ Facilities owned or operated by a department, agency or instrumentality of the U.S.

³⁰ See <http://www.epa.gov/swerffrr/documents/ffcc.htm>

³¹ For purposes of this section of the report, being on the NPL refers to those mega sites categorized as final or deleted. Proposed sites generally do not have enough cost documentation to meet the mega site definition.

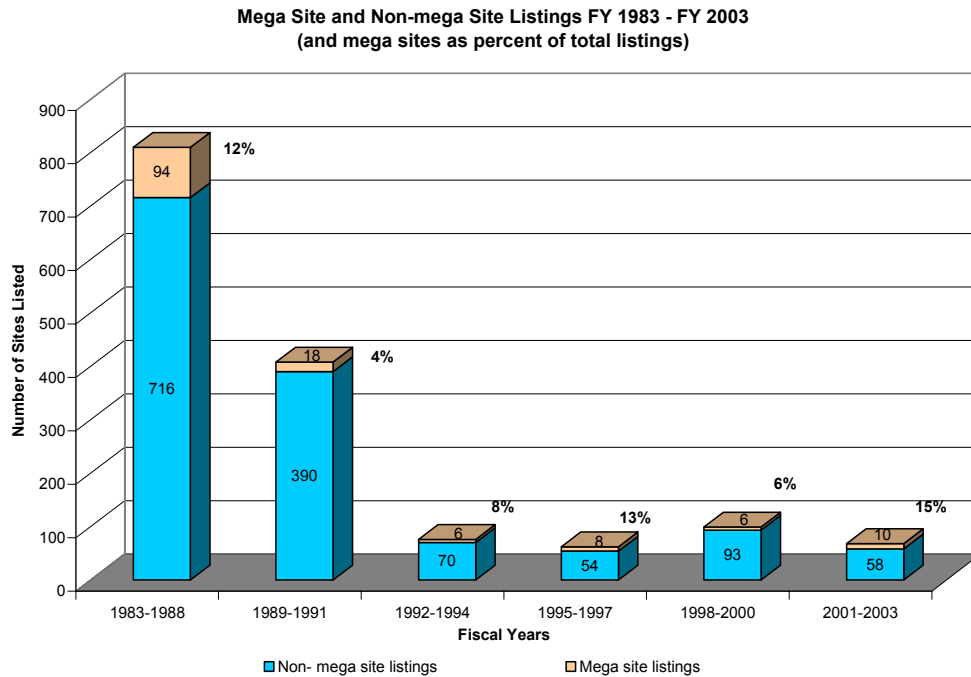
³² PowerPoint presentation by Dr. Elizabeth Southerland to the NACEPT Superfund Subcommittee on November 5, 2003; data as of 10/15/03.

³³ Resources for the Future (RFF) book: *Superfund's Future: What Will It Cost?*, Probst, Katherine N. and Konisky, David M., et al, 2001, p. 102.

³⁴ Sites were first listed to the NPL in 1983. The Superfund Amendments and Reauthorization Act (SARA) was enacted in 1986.

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1 sites should they eventually be listed on the NPL. Of these 13, approximately half (6)
2 have been proposed for NPL listing and the remainder (7) are being dealt with under the
3 Superfund Alternative program³⁵. Should cleanup actions under other programs (e.g.,
4 RCRA Corrective Action) fail, these sites all have the potential to become NPL sites.



5

6

7 The chart above shows the number of mega site listings per year from FY 1983 – FY
8 2003, both in comparison to non-mega site listings and as a percentage of total listings in
9 that time period.³⁶ As of the end of FY 2003, confirmed or potential mega sites account
10 for slightly over 9 % of the 1,518 final or deleted sites currently on the NPL; this is
11 consistent with an average of just under 10% for the 20-year period represented in the
12 chart above.

13

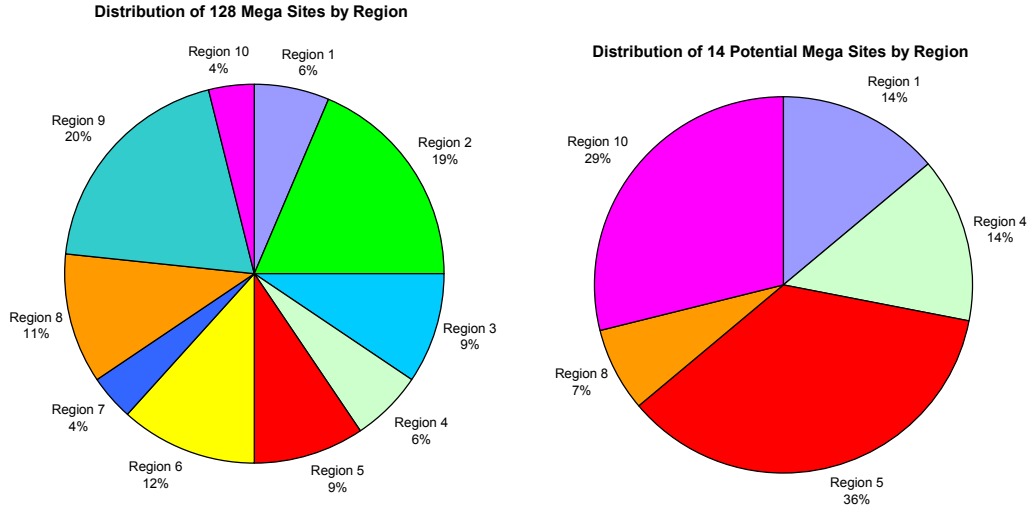
14 These 142 sites are distributed around the country with nearly 40% of existing sites
15 located in two regions (Regions 2 and 9) and 65% of potential mega sites in two different
16 regions (Regions 5 and 10). The distribution of these is shown in the two pie charts

³⁵ PowerPoint presentation by Dr. Elizabeth Southerland to the NACEPT Superfund Subcommittee on November 5, 2003; data as of 10/15/03.

³⁶ Ibid.

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below; the one on the left is the geographic distribution of the 128 megasites, the one on the right is the distribution of the 14 potential mega sites. The distribution of site type by region is examined later, in the site types section.



Trends and Future Expected Listings

Precisely projecting future mega site listings is very difficult. The RFF study attempted to answer this question – how many mega sites are anticipated to be listed on the NPL in the next several years – in order to predict the future cost of the Superfund program. They examined trends in listing, analyzed EPA expenditures, considered findings from other studies of Superfund costs, surveyed regional managers, and ultimately concluded that the Superfund program could expect, on average, one to three new mega sites per year listed on the NPL for FY 2001 – FY 2009, although they did note that from FY 1999 through the first quarter of FY 2001, eight mega sites were listed as final as compared to an average of one mega site per year listed between FY 1996 and FY 2000.³⁷

One of the reasons it is so difficult to predict future listings, is that whether or not a site will be a mega site is not always known at the time of listing. Sites can become mega sites as they move through the remedial process, thus the data around recent listings is generally not complete enough to accurately assess the likelihood that a site might become a mega site. EPA's presentation on mega sites at the first Subcommittee meeting

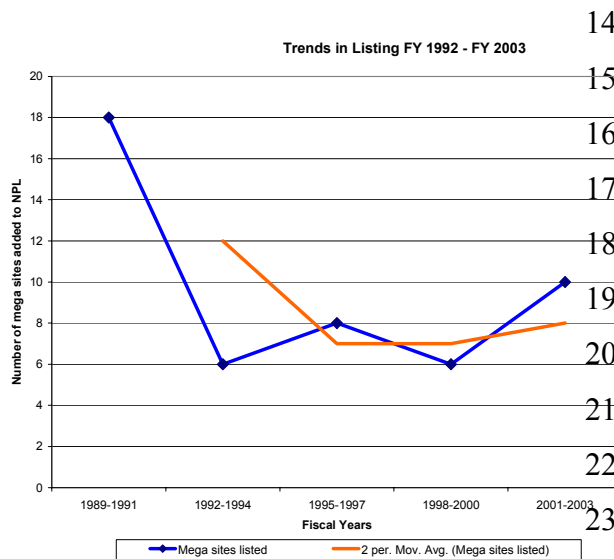
³⁷ *Superfund's Future: What Will It Cost?*, Probst, Katherine N. and Konisky, David M., et al, 2001, p. 103
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on June 19, 2002, suggested that mega sites will continue to be added to the NPL at a rate of four to six percent of total listings per year. At that rate, and using the average of 28 additions per year to the NPL for the last decade of the program (see background and context in NPL section), one to two additional listed sites per year could be expected to be mega sites or potential mega sites.

A large percentage of the mega sites currently on the NPL were listed prior to 1990.³⁸ According to the RFF study, approximately half of the mega sites discussed in its findings (56 of 112) were listed in the early years of the program (1983-1986) and are identified as pre-SARA sites. EPA is currently analyzing data it received from the regions about the pace of cleanup at these pre-SARA sites. Of 202 sites identified as pre-SARA at the end of FY 2002, more than a quarter of them (nearly 28%) are mega sites³⁹ Site size and complexity emerges as primary reason, but analysis is not yet complete.



Using recent data supplied by EPA⁴⁰, and focusing on mega site listings from FY 1989 – FY 2003, there are two trend line charts below to help analyze what might be anticipated in terms of future listings. Since half of all sites currently on the NPL were listed in the first five years of the program, these 800+ sites are not considered when looking at trends because they would tend to skew the

trend line. In the chart titled *Trends in Listing FY 1992 – FY 2003*, the blue line plots the data points for number of mega sites currently on the NPL that were listed between FY 1989 and FY 2003. The orange line represents a moving average, chosen because it

³⁸ EPA presentation to the NACEPT Subcommittee on June 19, 2002: *The Mega Site Issue*, Bruce Means, Office of Emergency and Remedial Response

³⁹ *Pre-SARA Sites: Analysis of Why Construction Is Not Yet Complete at Certain Sites*, June 6, 2003 Executive Summary provided to Subcommittee.

⁴⁰ PowerPoint presentation by Dr. Elizabeth Southerland to the NACEPT Superfund Subcommittee on November 5, 2003; data as of 10/15/03.

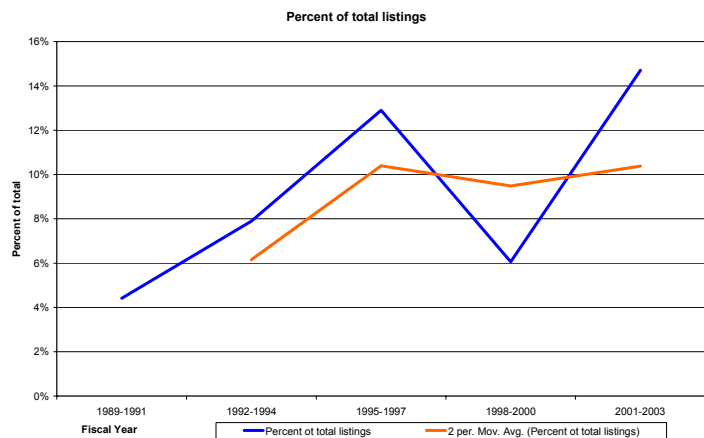
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smooths the fluctuations in data, showing the pattern more clearly. Use of a linear trend line would make it appear that mega site listings are decreasing and could be expected to decrease in the future. Using this chart, it appears that the Superfund program could expect 6-8 mega sites to be added every three years, or approximately 2-3 per year.

The second trend line chart, titled *Percent of Total Listings*, looks at data related to mega sites as a percent of total listings to help predict what can be expected in relation to mega sites. Again, the blue line represents recent data supplied by EPA⁴¹ and the orange line is a moving average. Similar to the first

trend line chart, the data from the early years of the program are excluded and a moving average trend line is shown because a linear trend line would make it appear that mega sites as a percent of total listings is on an upward slope.

Using the information in this chart, the Superfund program could expect mega sites to continue to represent roughly 10% of all listings in the near future.



While the number of mega sites added to the NPL might be expected to remain somewhat consistent in the next few years, the total number on the NPL will likely grow. The length of time it takes to complete cleanup at mega sites is one of the reasons the total number of mega sites on the NPL continues to grow and impact the overall Superfund budget, rather than an increase or expected increase in number of listings. The cumulative effect of adding even one or two mega sites per year can have a profound effect on the remedial action budget, a topic which is discussed in further detail in the section on cost and funding.

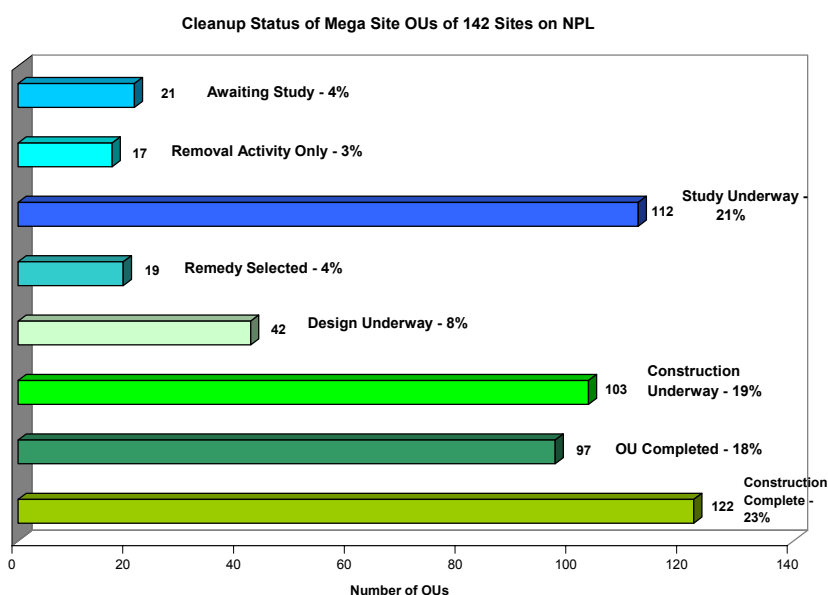
⁴¹ Ibid.

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Status of Mega Sites

The status of megasites within the program, rather than the number of megasites either on the NPL or anticipated for listing on the NPL, may be a more important aspect to consider when defining the magnitude of the problem. The RFF study found that, in general, mega sites move through the remedial pipeline at approximately the same rate as non-mega sites, particularly once they reach the remedial design/remedial action phase. Any increase in length of time for cleanup was primarily attributed to the investigation and feasibility study phase.⁴² A large number of mega sites, however, reaching the most expensive phase of the program (remedial phase) concurrently could have significant impacts on the overall remedial action budget in any given year.

EPA tracks the status of mega sites by operable units.⁴³ The RFF study found that on average, the number of operable units at mega sites was 3.8, compared to 1.6 OUs for non-mega sites. Operable units move through the remedial pipeline at different rates, so one portion of a mega site may be at a more advanced stage of cleanup than another OU. The chart to the right shows the pipeline status for the 142 existing or potential mega sites currently on the NPL.⁴⁴ The total number of OUs represented by these 142 sites is 533, or an average of 3.75 OUs per mega site. Roughly two-thirds of all sites (364 or 68%) are in the remedial design or construction phase of the cleanup pipeline.



⁴² Probst and Konisky, pp 50-52.

⁴³ A distinct cleanup project at a site; OUs can be based on geography, media, or remedy.

⁴⁴ PowerPoint presentation by Dr. Elizabeth Southerland to the NACEPT Superfund Subcommittee on November 5, 2003; data as of 10/15/03.

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For all 1,518 final or deleted sites currently on the NPL, 58% (886) are considered construction complete and 42% (632) are in some other phase than construction complete. Of the 886 construction complete sites, 44 (or 5%) are mega sites, compared to 98 (or 16%) of the remaining 632 sites which are not construction complete. EPA estimates that the 98 mega sites in other phases than construction complete have an average of 4.2 operable units per site, a slightly higher average than the 3.75 for all OUs associated with the 142 mega sites. They also estimate that for the 44 mega sites considered construction complete, there are on average fewer operable units per mega site at 2.8.⁴⁵ This would tend to support the notion that the mega sites remaining on the NPL are more complex in some manner, either because of a larger geographic area affected or multiple media contamination.

Common Characteristics

Certain types of mega sites were culled out in the charge given the Subcommittee as having high potential to be mega sites. Specifically, mining and sediment sites were mentioned as often being synonymous with mega sites and thus, are examined more in-depth later in this section.⁴⁶ Discerning whether certain types of sites are more likely to be mega sites than others led the Subcommittee to examine data about site types by activity (e.g., main activity that caused the contamination), by specific components (e.g., contaminated sediment), and by level of contaminants (e.g., HRS score, specific pathways of contamination). Early in the Subcommittee deliberations, EPA suggested that factors other than site type that can make a site more or less expensive to cleanup include multiple sources of contamination, proximity to populations or sensitive areas, multiple aquifers affected, mixed wastes, and number of operable units.⁴⁷

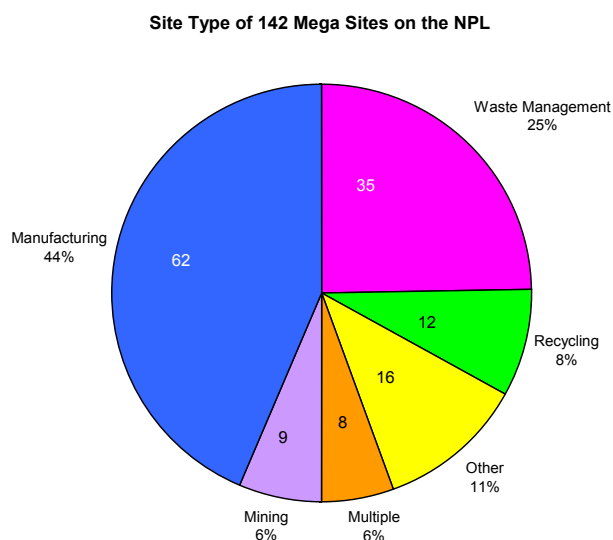
⁴⁵ Presentation at November 5, 2003 meeting.

⁴⁶ See <http://www.epa.gov/oswer/docs/naceptdocs/june02meetingsummary.pdf> NACEPT Superfund Subcommittee Charge, REVISED 6-19-02 Following Subcommittee Discussion on 6-18-02, Attachment C

⁴⁷ EPA presentation to the NACEPT Subcommittee on June 19, 2002: *The Mega Site Issue*, Bruce Means, Office of Emergency and Remedial Response

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The pie chart below represents the distribution of mega sites across the site types that are used by EPA to classify sites.⁴⁸ The most significant categories are manufacturing (e.g., chemical processors, metal fabricators) at 44% and waste management (e.g., landfills, illegal dumps) at 25%. This is consistent with overall NPL listings in which these two categories also represent the largest percentage of site types (35% and 38%, respectively).⁴⁹

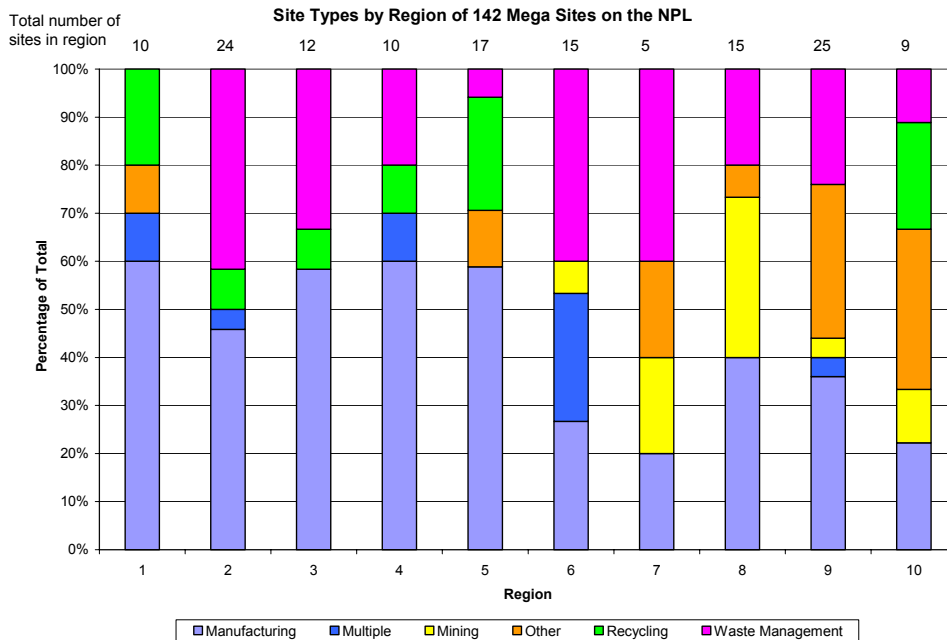


The distribution of site types, by region, is explored in the next chart. In Regions 1-5, manufacturing sites make up nearly 50% or more of the mega sites in each region, but there are no mining mega sites in any of those same regions. Regions 6-9 have no recycling sites that are mega sites, while recycling sites account for 20% of sites in Regions 1, 5, and 10. Region 8 has the highest percentage of mining mega sites, at slightly over 30%.

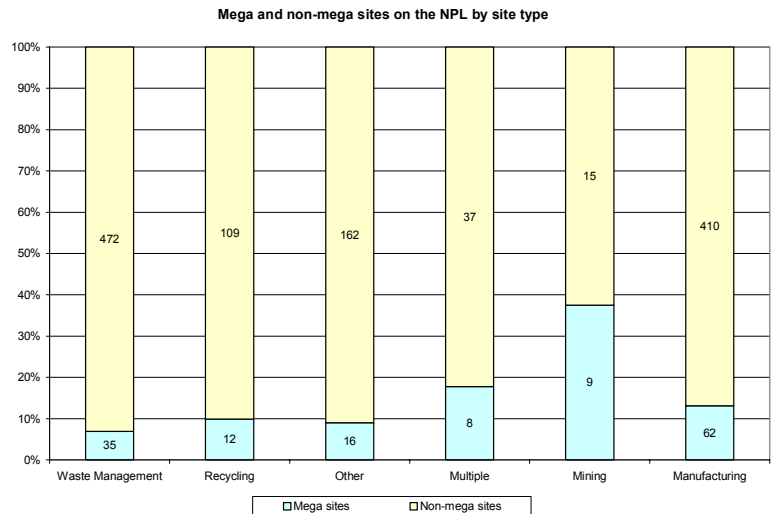
⁴⁸ "Multiple" refers to sites that fall into more than one site type. "Other" includes military ordnance production, and research/testing facilities, ground water plumes, and transportation.

⁴⁹ Source: Data provided by EPA in the November 5, 2003 presentation. Data uses only the final and deleted non-federal facility sites

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The bar chart below presents total number of mega and non-mega sites by site type and demonstrates that for most categories, mega sites represent a relatively small percentage in any given category and indeed are less than 10% in three of the categories (waste management, recycling, and other). In one of the categories – mining – mega sites represent nearly 40% of all sites in that category. While mining sites represent a relatively small overall percentage of sites on the NPL, they appear to have a disproportional number of sites that are mega sites.



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Mining

Mining sites represents 6% of all mega sites and 2% of total NPL listings.⁵⁰ The environmental impacts of hardrock mining include many of the factors that make sites complex in terms of cleanup: complicated ownership (for abandoned mines, ownership can extend back decades), large geographic area (acid drainage and chemical leaching can extend miles into downstream surface waters and groundwater), and multiple contamination pathways (soil, groundwater, surface water).

The cost of cleaning up mining sites can run into hundreds of millions of dollars. The Bunker Hill site in Idaho, which has been on the NPL since sites were first listed in 1983, has an estimated total cost of \$562 million, with \$152 million obligated to-date. EPA estimates that total cleanup of the Iron Mountain Mine in California will cost \$880 million dollars, with more than \$46 million spent to-date.⁵¹ Even for non-mega mining sites, the cost of cleanup tends to run higher than average. RFF determined that the average cost to cleanup non-mega mining sites is nearly double the average costs for all non-mega sites. Non-mega mining sites averaged \$22 million compared to the overall non-mega site cleanup average of \$12 million.⁵²

EPA has acknowledged that mining sites pose special challenges to the Superfund program and has established a program component (Abandoned Mine Lands Team) that examines mining sites in a special way. While not focused specifically on mega sites, it provides a consistent framework for addressing hard rock mining sites. The strategy has five key elements for addressing these sites: 1) Prevention (i.e., keep sites from becoming Superfund sites); 2) Examine other viable cleanup options, such as PRPs or other state/federal programs or agencies (i.e., Superfund Alternative, Brownsfield, BLM, USFS); 3) Form collaborative partnerships with PRPs, other state/federal program or

⁵⁰ Source: Data provided by EPA from Superfund eFacts database, October 15, 2003 and data from November 5, 2003 presentation to Subcommittee.

⁵¹ Data from FY 2002 Funding Needs – Letter to U.S. Senator James Jeffords (Chair, Committee on Environmental and Public Works) from the Inspector General (IG), October 25, 2002.

⁵² *Superfund's Future: What Will It Cost?*, Probst, Katherine N. and Konisky, David M., et al, 2001, p. 91

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agency; 4) Use of the Superfund program with all its authorities; and 5) Ensure public participation in decision-making.

Contaminated Sediments

Considering specific components of contamination is another way the Subcommittee tried to evaluate the mega site issue, specifically whether sites with a contaminated sediment component are more likely to be mega sites and if so, how many of these does EPA expect in the future. The RFF study cites a 1997 EPA survey that identified more than 90 watersheds that had some justification for concern about sediment contamination in urban waterways, coastal estuaries, harbors, and inland waterways.⁵³ The RFF study also noted several factors which complicate trying to predict the influence contaminated sediment sites will have on future NPL listings, including:

- Remediation poses difficult challenges inherent to the underwater environment;
- It is generally difficult to identify PRPs, in part because the contaminants are often decades old; and
- Allocation of cost and actions across jurisdictional boundaries is complicated.⁵⁴

Many Superfund cleanups address contaminated sediments as one component of cleanup. EPA provided information to the Site Types work group that showed 141 sites on the NPL which had a signed ROD or Action Memo⁵⁵ that includes sediment. They also provided a subset of 66 sites, referred to as Tier 1 sediment sites at which the sediment component represented a significant portion (i.e., more than 10,000 cubic yards or more than 5 acres) of the cleanup remedies and therefore was being tracked at the Headquarter level. Of these 66 sites where contaminated sediments is a primary cleanup driver, 23 (or 35%) are mega sites. EPA also provided a list of 39 proposed and final NPL sites which it was tracking at the HQ level because the sites might need a contaminated sediment remedy in the future and had the potential to become Tier 1 sediment sites (i.e., sites

⁵³ Ibid, p.90

⁵⁴ Ibid, P. 90

⁵⁵ As of September 30, 2001

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1 where sediments would drive the remedy), with the caveat that some of those 39 sites
2 were very early in the process and may result in no sediment remedy.⁵⁶

3
4 While almost half of all mega sites have a contaminated sediment component⁵⁷, a
5 relatively small percentage of them (13 of 142 or 9%)⁵⁸ have a sediment component that
6 is a significant cleanup driver. At the majority of NPL sites with a sediment component –
7 nearly 75% – the sediment-related actions cost less than \$10 million. EPA looked more
8 closely at that universe of mega sites with less than \$10 million costs for sediments and
9 identified that 40 percent of them had sediment costs of less than \$1 million.⁵⁹

10
11 Of the nine percent of mega sites which have an identified contaminated sediment
12 component that is expected to cost more than \$50 million, these sites further breakdown
13 into site types (based on activity at the site that caused the contamination) as follows: 9
14 (~70%) are categorized as manufacturing, 1 (~7.5%) is categorized as multiple, 1 (7.5%)
15 as other, 1 (7.5%) as recycling, and 1 (7.5%) as waste management.⁶⁰

16
17 To ensure scientifically sound and nationally consistent decisions related to contaminated
18 sediments, EPA issued eleven principles for managing contaminated sediment risks in
19 2002 (OSWER Directive 9285.6-08) and draft guidance (OSWER 9355.0-85) to provide
20 technical and policy guidance to assist in making risk management decisions for
21 contaminated sediment sites being considered for CERLCA actions.

22
23 The guidance related to the 11 management principles also established a new headquarter
24 consultation process for all NPL sites (proposed or listed) where EPA is the lead agency,
25 the removal program under CERCLA, and the Superfund Alternative program. In
26 general, the principles are designed to support site-specific risk-based remedial action

⁵⁶ Source: Information provided to the Site Types work group for inclusion in information binders.

⁵⁷ EPA presentation to the NACEPT Subcommittee on June 19, 2002: *The Mega Site Issue*, Bruce Means, Office of Emergency and Remedial Response

⁵⁸ Based on information in the List of 142 Mega Sites, handed out by EPA at November 5, 2003 meeting.

⁵⁹ EPA presentation to the NACEPT Subcommittee on June 19, 2002: *The Mega Site Issue*, Bruce Means, Office of Emergency and Remedial Response

⁶⁰ Based on information in the List of 142 Mega Sites.

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1 decisions using an iterative process that encourages early and meaningful involvement of
2 affected stakeholders.

3
4 The consultation process is a two-tiered procedure where Tier 1 sites are those for which
5 the sediment action will address more than 10,000 cubic yards or five acres for
6 contaminated sediment and Tier 2 sites are very large, controversial, or complex sediment
7 sites. Tier 2 sites are overseen by a technical advisory group (Contaminated Sediments
8 Technical Advisory Group – CSTAG) composed of staff from each region (10) plus five
9 HQ-level staff to help site managers appropriately manage remedy selection for
10 contaminated sediments throughout the Superfund cleanup process in accordance with
11 the 11 risk management principles.

12
13 There are currently seven sites which EPA identified as warranting CSTAG review⁶¹. Of
14 these, three are mega sites and one has been proposed to the NPL.

15
16 **Cost of the Problem**

17 Cost has been the defining characteristic of mega sites. The RFF study determined that
18 the average cost to cleanup a mega site was tenfold greater than cost for an average non-
19 mega site. Making certain assumptions about the number of operable units, the RFF
20 analysis concluded that the average cost per megasite was \$140 million, compared to \$12
21 million per non-megasite.⁶² EPA has asserted that as of 2002, 80% of cleanup resources
22 for ongoing construction projects are distributed to less than 20% of the sites with
23 funding needs, limiting its ability to adequately fund all site with remedial action needs.⁶³

24
25 Specific cost data provided to the Subcommittee showed that 20 out of 80 total sites
26 receiving remedial action funding in FY 02 accounted for \$255 million out of a total of
27 \$320 million obligated that fiscal year. Of these 20 sites, 14 (or 70 %) were classified as

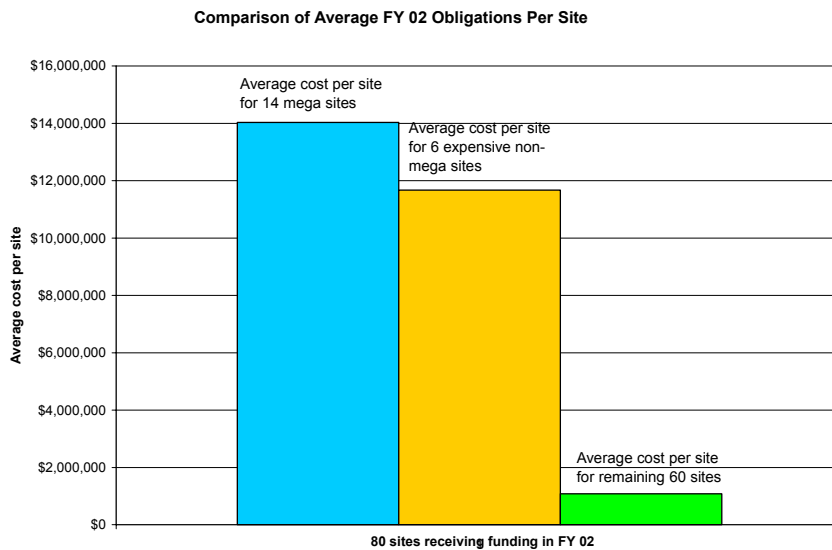
⁶¹ See http://www.ep.gov/superfund/resources/sediment/cstag_sites.htm

⁶² RFF book, p.87, estimates include extramural costs, assume 3.8 operable units for megasite versus 1.6 for non-mega sites

⁶³ EPA presentation to the NACEPT Subcommittee on June 19, 2002: *The Mega Site Issue*, Bruce Means, Office of Emergency and Remedial Response

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mega sites.⁶⁴ The remaining \$65 million was allocated among the other 60 sites receiving funding in FY 02. The chart below compares average cost per site for the 14 mega sites (\$14 million); the six non-mega, but expensive sites (\$11.6 million); and the remaining 60 sites receiving remedial action dollars in FY 02 (\$1 million). This data demonstrates that a site does not have to be a mega site to pose a serious impact to the remedial action budget. A relatively small number of sites that require large infusions of remedial action dollars in any given year can cause a significant strain on the budget, particularly in times of declining or steady resources.



Thus, even with mega sites added to the NPL at the conservative rate identified in the RFF study, the effect on the remedial action budget from mega sites will continue. Information provided (and displayed in the section on status of mega site OUS) shows that there are already a significant number of mega sites in the earlier stages of the cleanup pipeline (e.g., study underway) that will be moving into the remedial action phase of the program over the next few years.

While there are a number of expensive sites moving through the cleanup pipeline at this time, some of which qualify as mega sites using the \$50 million amount as the

⁶⁴ Data from IG's October 2002 letter to Senator Jeffords.

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delineating factor, there also are a few sites for which cleanup costs are expected to soar into the hundreds of millions of dollars. Twelve sites have been identified through information provided by EPA

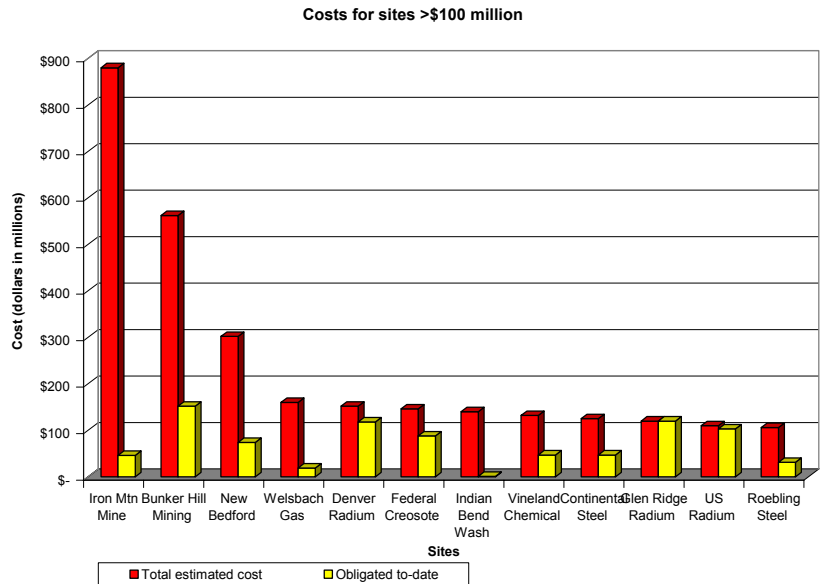
as expected to cost more than \$100 million to cleanup⁶⁵.

These 12 sites are represented in the chart to the right, with obligations to-date (as of FY 02 obligations) compared to total expected costs to complete cleanup. All of these sites are in the construction underway category of cleanup. All are

receiving funding through the Superfund program – six are fund-lead; six are a mix of fund and RP lead. Eight are classified as manufacturing sites. The total amount needed to cleanup these twelve sites alone is expected to exceed \$2.9 billion, an average of nearly \$250 million per site. As of FY 02 obligations, over \$846 million has been spent on these twelve sites.

Conclusions

Large, complex, expensive sites will continue to be part of the Superfund program. How to deal with them in a manner that assures cleanup occurs in a timely fashion, yet does not delay or supercede other cleanup needs, is the challenge faced by Superfund program managers. Current Agency approaches include special considerations for certain site types (e.g., abandoned mines, contaminated sediments), as well as a pilot program to address urban river cleanups. Continued attention to special management options will be necessary, at least for the near-term, as there is no indication that mega sites will stop posing challenges to the Superfund program.



⁶⁵ Data from FY 2002 Funding Needs – Letter to U.S. Senator James Jeffords (Chair, Committee on Environmental and Public Works) from the Inspector General (IG), October 25, 2002.

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Policy Options and Difficult Questions

The Subcommittee discussed what the most appropriate approach to delineating the mega site universe of sites would be. It was generally agreed that a monetary limit can serve as a practical surrogate for complexity. The current \$50 million definition was seen by some as an appropriate number, while others would argue for a higher (e.g., \$90 or \$100 million) trigger. In any case, the Subcommittee believes that while a monetary definition can serve as a practical way to categorize a group of sites that merit special attention, it is most important that the Agency have a thorough understanding of the complexity of these sites and what the underlying causes of that complexity are. During the course of the Subcommittee's deliberations a number of contributors to complexity were noted including, but not limited to:

- Large geographic area
- Scientific complexity
- Administrative complexity
- High-risk activities (e.g., recycling)
- Liability exemptions (e.g., recycling)
- Site type (e.g., mining)
- Media type (e.g., sediments)
- Specific issues in specific regions (e.g., sediments in region 10)
- Tribal communities and other communities where traditional or religious practices involve use of natural resources
- Multiple sources of contamination
- Future risks
- Impacts on multiple communities

As the management recommendations presented below indicate, the Subcommittee believes that it is most important that the Agency build its capacity to manage these parameters of complexity in the most effective and efficient ways possible. Once a site is designated as a mega site (regardless of what monetary definition is used) it is very important that the EPA be able to marshal the appropriate expertise and management experience to determine how the risks posed by the site can be addressed.

In response to the Subcommittee's charge, the site types work group and other members of the Subcommittee considered difficult policy questions and explored various broad

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1 policy-level options for addressing large, complex and costly sites. Some of the difficult
2 questions the members grappled with included:

- 3 • Should fewer sites be cleaned up to a higher level of cleanup standards or should
4 there be less cleanup at more sites (i.e., reduce immediate risks only)?
- 5 • Should cost-effectiveness be a consideration? Should expensive sites be left off of
6 the NPL? Should some subset be left off?
- 7 • If these sites are not addressed by Superfund program, where would they be
8 addressed? What existing programs have the funding/resources/experience to
9 deal with sites of this magnitude? What are the ensuing implications (e.g.,
10 appropriations, liability)?

11
12 Several of the options considered by the Subcommittee are presented here for purposes of
13 demonstrating the breadth of options considered, not because they represent a consensus
14 recommendation of the group.

- 15
16 ■ Categorically defer certain types of sites (e.g., urban waterways, mining sites,
17 contaminated sediment sites) that are likely to have significant resource
18 implications for the Superfund program to other cleanup programs. This
19 approach would be similar to the approach the Agency currently uses for sites
20 subject to cleanup under the RCRA corrective action program, where Agency
21 policy is to defer to the RCRA program to compel and oversee cleanup.
- 22 ■ Create a new cleanup program specific to sites, or specific types of sites, that are
23 likely to have significant resource implications.
- 24 ■ Create a separate approach within the Superfund program dedicated to sites, or
25 specific types of sites, that are likely to have significant resource implications.
- 26 ■ Do not distinguish large costly from other NPL caliber sites. Many sites are
27 complex and cost should not be the distinguishing factor that drives a different
28 decision making or management framework. Management tools are available to
29 effectively address these sites within the context of the existing Superfund
30 Program.

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The Subcommittee was unable to reach agreement on a preferred option for how best to manage mega sites. As a result, it was agreed that a set of alternative scenarios should be presented that EPA should consider in making future management decision related to large, complex sites.

Alternative Scenarios for Managing Mega Sites (to not imply a priority ordering of these scenarios, there are currently named for types of trees – the name of the lead contributor from the Subcommittee for each scenario is noted)

Oak Scenario (Lindene Patton)

A. Definition of Mega Site

The use of \$50 million dollars as a defining monetary amount for sites referred to as mega sites makes sense. This dollar amount serves as an effective surrogate for defining a group sites that merit special management attention by EPA. It is also important to note, however, that use of a monetary definition for mega sites does “hide” the aspects of site complexity that are associated with this class of sites. This is acceptable as long as the Agency recognizes the nature of the complexity and develops appropriate management approaches to account for it.

B. Listing of Mega Sites

In this scenario, mega sites would continue to be listed on the NPL as is current practice. No special list should be created.

C. Managing Sites based on Administrative and Scientific Complexity

It needs to be recognized that mega sites should be distinguished from other NPL sites due to both their administrative and scientific complexity. Administrative complexity refers to issues such as the number and status of the PRPs involved at the site, the number of agencies that could potentially be involved in the clean-up process, the costs and extended timelines that could be associated with the clean-up process. Scientific complexity refers to the technical and scientific challenges that may be associated with

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the site. This could include situations where appropriate clean-up technologies do not exist

The Agency should assess and ultimately manage mega sites based on a thorough understanding of both the administrative and scientific complexities associated with a particular site.

D. Management Approaches

Based on the assessment by the EPA regarding the nature of the administrative and scientific challenges that exist at a site, special management attention such as those delineated in the management recommendation #1 presented below should be applied. It is very important that approaches that are utilized by the private sector in managing large complex projects be brought to bear on mega sites. This should include the application of cost engineering strategies, innovative project management and contracting mechanisms (see recommendation ____ in NPL section), use of specialized teams that possess skills and experience in the particular type of pollutants and clean-up challenges that exist at a site, and establishment of centers of excellence which focus on the development and application of new clean up technologies.

Maple Scenario (Grant Cope)

A. Definition of Mega Sites

EPA should acknowledge that the term “mega site” refers to a highly complex toxic waste site, but use the surrogate label of either \$50 or \$90 million to identify such sites for program management purposes.

B. Prevent Future Mega Sites

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1 EPA should try to stop the creation of future mega sites to protect public health and
2 environmental quality and preserve fund resources. EPA should analyze trends in the
3 types of sites listed (including activity resulting in contamination, industrial sector,
4 adequacy of financial assurance and insurance mechanisms, contaminants of concern, and
5 other factors) to identify the industries or activities that have a high risk of creating mega
6 sites. Once EPA identifies such industries, the agency should initiate pollution
7 prevention and targeted enforcement efforts to decrease the likelihood that entities will
8 create future sites. As part of this effort, EPA should also comply with Superfund
9 requirement in section 108(b) that the agency create a financial responsibility mechanism
10 at facilities that are at risk of becoming Superfund sites. EPA should consider tiering the
11 amount of required assurance or insurance under a section 108(b) program to the
12 vigorousness of a facility's pollution prevention efforts.

13
14 **C. Continue to List Mega Sites on the NPL**

15
16 EPA should continue to list mega sites on the National Priorities List. Other cleanup
17 programs may lack the funding, technical expertise, and legal authority to address threats
18 at such sites. However, the Superfund program is currently cleaning up such sites and
19 can apply its assets and experience to other sites.

20
21 **D. Reauthorize Superfund's Polluter Pays Fees**

22
23 EPA has cleaned up mega sites in the past and can continue to clean them up in the
24 future, if the agency has the resources to undertake such cleanups. Therefore, the
25 Administration and Congress should approve and sign into law a reauthorization of
26 Superfund polluter pays fees, with increased authorizations and appropriations to ensure
27 that public health and environmental quality are protected at dangerous toxic waste sites
28 across the country, including mega sites. A recent Congressionally requested report
29 demonstrates that the agency may not need a tremendous amount of additional funds to
30 address the threats at these sites. However, the deficit in needed resources will grow, as
31 will the cost of cleanups, if the Administration and Congress delay in providing

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1 additional funding. Therefore, it is vital that the Administration and Congress act as
2 expeditiously as possible to reauthorize the fees and increase program authorizations and
3 appropriations.

4
5 **E. Increasing Enforcement at Mega Sites**

6
7 EPA must aggressively seek out and negotiate with PRPs at mega sites to recover costs
8 and preserve fund resources, create a deterrent effect in the creation of future sites, and
9 expedite the clean up process. Efficacious cost recovery actions at all sites will increase
10 the program's capacity to direct resources to needed cleanups. EPA official should issue
11 and work with the Department of Justice to enforce unilateral administrative orders
12 directing PRPs to undertake clean up activities.

13
14 **F. Endorse EPA's Use of Expert Teams to Address Site Complexities**

15
16 EPA currently relies on informal communications between agency and non-agency
17 experts at highly complex sites to plan and initiate clean up activities. EPA should
18 continue to use such arrangements, and expand their use as appropriate to address mega
19 sites. However, EPA should not adopt bureaucratic rules and processes for the use of
20 these teams, as this will increase costs and impede, not expedite, the pace of cleanups.

21
22 **Pine Scenario (Jane Gardner)**

23 **A. Supporting Principles**

24 It is important that EPA acknowledge the reality that mega sites pose special challenges
25 to the Superfund program and should not be addressed in a business-as-usual manner. In
26 particular, GE believes that Superfund monies should be spread among the maximum
27 number of sites to address current, real risks to human health on a prioritized basis. This
28 does not mean that mega sites should be ignored, or that future risk is ignored, but the
29 focus on mega sites should be reduction of immediate, real risks to human health and the
30 environment. Long term risk issues should be addressed under alternative programs,
31 especially where there is a viable PRP.

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Under this option, the NPL and CERCLA would no longer be the assumed/default programmatic approach for handling mega sites. In its stead, a federal and state Task Force would oversee a more intensive initial assessment of mega sites and their attendant risks. This enhanced assessment would identify “hot spots” and other sub-areas in mega sites that pose more (or less) significant risks. Following completion of the site analysis, the Task Force would actively explore a variety of funding options for all or part of the mega site, with an initial focus on PRP-funded cleanups and the use of non-CERCLA programs to help finance the cleanup. Superfund dollars would be used only for those portions of a mega site that pose a serious, immediate risk to human health or the environment, and for which no other funding options are available.

1. Screening of Mega Sites by Interagency Task Force.

Because of their complexity and geographic reach, many mega sites implicate the missions of a number of federal and state agencies including, for example, the United States Department of Defense, the Army Corps of Engineers, and the Interior Department. In order to coordinate these efforts, and to help identify non-EPA funding mechanisms for addressing such sites, an Interagency Task Force should take “ownership” of mega sites from the outset, rather than assuming that they will be handled by EPA and the Superfund program. EPA or the Council on Environmental Quality should head up the Interagency Mega Site Task Force. Task Force members should include standing representatives from the Army Corps of Engineers and the Interior Department, with additional representatives based on site-specific features of the mega sites that are being screened (e.g., DOD [military-related sites]; BLM [mining sites]; etc.).

2. Undertaking an Enhanced Preliminary Assessment for Mega Sites

The Task Force should commission a more thorough preliminary assessment (“Enhanced PA”) process (hazard identification and risk assessment evaluation) for mega sites.

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Because of the substantial stakes involved, it is important that actual site-specific conditions, rather than default assumptions, drive cleanup decision-making for mega sites. Additional up-front investments in an Enhanced PA evaluation will pay important dividends in helping to identify, and prioritize among, sites that pose the most serious risks. An Enhanced PA also will help screen mega sites and make programmatic commitments that match up with specific sites.

The Enhanced Preliminary Assessment will be used to identify the highest risks and hot spots at each mega site that should be addressed as a priority. The Task Force also should use the enhanced PA to evaluate whether the proposed site boundaries for the mega site are appropriate. Finally, the enhanced understanding of the site will help the Task Force match up various features of the mega site with potential programs that are tailored to those features.

[Note: funding for the enhanced PA's for mega sites would come from a variety of sources, depending on the nature of the mega site: (1) PRPs, for mega sites in which PRPs have substantial liability; (2) funding from federal programs that have ties to mega sites (e.g., DOD; DOI; Corps, etc.); (3) federal and state Superfund initial site characterization funding.]

3. Addressing Significant, Current Risks *[Note: we have discussed previously in great detail the emphasis on evaluating risk in a meaningful way, focusing on current and actual exposures rather than hypothetical, future worst-case exposures that are unlikely to ever become reality. In order to conserve the Superfund and ensure that the Superfund resources are stretched as widely as possible to address the greatest number of sites, EPA must reevaluate the way it defines and calculates risk. Currently significant program resources and funding go to "protect" against situations that simply can not occur in the real world. We can provide examples of EPA hypothetical risk assessment to show some of the absurdities that drain resources from the program with no benefit to the public or the environment. While the concept of "cost-benefit" raises hackles in the Superfund debate, it is the process by which the government addresses risk in virtually every other situation, and also is considered in fund-financed cleanups. Given the limited resources available to the Superfund program, it is our suggestion that EPA actively incorporate cost-benefit and risk management in its consideration of risk assessments. To hopefully respond to the controversy that might arise with this notion before it arises, cost-benefit does not mean allowing real risks to go unchecked or unaddressed, but that the decision to spend resources, and the decision of to what extent they should be spent at a particular site, looks at getting the greatest amount of risk reduction for the most*

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1 *efficient spending of money. The current program does not consider this and hence,*
2 *significant resources are waylaid or spent inefficiently.]]*
3

4 If the enhanced PA (or any other information) indicates that portions of a mega site
5 pose a significant, current risk to human health or the environment (i.e., current
6 exposure to a hazardous substance at a dose likely to cause adverse effects unless
7 actions are taken promptly, such as residents drinking groundwater that exceeds
8 MCLs) , the Task Force should take immediate action to request any viable PRPs that
9 have liability to address such risks to undertake a removal action. If the viable PRPs
10 refuse to perform the removal action, EPA should issue and seek judicial enforcement
11 of a 106 order before spending Fund dollars. If there are no viable PRPs, the Task
12 Force can ask EPA to use Superfund's removal program to address such risks. Use
13 of the Superfund removal authority would not mean that a mega site would need to be
14 listed on the NPL; EPA's removal authority is not dependent upon whether a site is
15 listed on the National Priorities list. However, if funding is not available under the
16 removal program, those portions of the site that present a significant, current risk ,
17 and those only, should be considered for NPL listing.
18

19 **4. Active Pursuit of non-CERCLA Cleanup Approaches for Mega Sites**

20 Once any significant, current risks have been addressed at a mega site, the Task Force
21 shall have the responsibility to determine the most appropriate state or federal cleanup
22 program for addressing any significant future, risks (i.e., probability of exposure in the
23 future to a hazardous substance at a dose likely to cause adverse effects unless actions are
24 taken to prevent completion of an exposure pathway, such as residents withdrawing water
25 from a clean portion of an aquifer that contains a plume of contamination). The
26 alternative, non-NPL programs that might be invoked to deal with all or part of such sites
27 would include DOD cleanup, Corps of Engineers, Great Lakes and Water Resources
28 Development Authority programs, cleanups under state programs (including voluntary
29 cleanup programs), mining site reclamation funds, etc. A special effort should be made
30 to leverage available resources, and to utilize public/private partnerships where possible,
31 as is being done on the Ashtabula River in Ohio and the Anacostia River in Washington ,

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1 and as EPA and the Corps are seeking to do in the context of their urban rivers restoration
2 initiative.

3
4 The Task Force's efforts to coordinate across programs and access additional funding
5 sources shall not affect, in any way, the continuing responsibility of PRPs to fund
6 remedial activity for which they are liable under CERCLA and other laws. In that
7 regard, the Task Force shall actively seek to involve PRPs in the implementation of
8 cleanup activity at mega sites. In particular, EPA should issue 106 orders to, and enforce
9 them against, viable PRPs that refuse to perform or fund a cleanup, in order to conserve
10 Superfund dollars for orphan sites.

11
12 **5. Superfund Program Funding As Safety Net**

13 Under the approach described above, the special complexity and cost challenges of mega
14 sites are acknowledged up front, and early efforts are made to better characterize the risks
15 posed by mega sites, so that any significant, current risks can be addressed through
16 removal actions. A more thorough, site-specific investigation of the site also will enable
17 the Task Force to optimize funding and programmatic opportunities to address
18 remediation needs at mega sites, recognizing that some aspects of mega sites might be
19 handled under certain programs (e.g., DOD or WRDA), while others might be addressed
20 through other funding mechanisms (e.g., PRPs, acting under state or non-EPA oversight).
21 In all cases, CERCLA authority and CERCLA funding would remain available in the
22 event that adequate progress is not made under other programs.

23
24 **Draft Recommendations on Management of Mega Sites**

25 While the Subcommittee is not presenting a consensus view regarding a preferred options
26 for managing mega sites, there was agreement that large, costly sites may deserve special
27 management consideration. Several management strategies were discussed by the
28 Subcommittee. State and federal government representatives, as well as private sector
29 representatives mentioned that sites with unusually high costs can benefit from
30 management by more experienced remedial project managers. These seasoned staff are
31 familiar with sites around the country or region, and may have better awareness of cost-

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effective, reliable approaches and construction management strategies. Some members also cited OSWER's "teenager site" review as an example of how to use Headquarters' active involvement and management to bring national consistency and expertise to bear where large and expensive sites are particularly complex or fraught with controversy. These management initiatives help speed progress throughout the program, and inform Regional staff about success stories from around the country. Complex sites can engender "analysis paralysis," and the teenager review can move the site to results.

The following management recommendations are intended to improve opportunities for dealing with mega sites in a manner that attains cleanup results and does not result in a system clogged by a few large, extremely complex and costly sites.

Recommendation 15: While all Superfund sites present management challenges, mega special management attention. EPA should establish practices that result in the most challenging sites receiving the necessary resources and attention.

In the private sector, it is common for very expensive projects to be governed by special forms of project management and receive greater attention from management. In recognition of the fact that mega sites tend to remain on the NPL for long periods of time and their high costs can have important impacts on the Superfund budget, EPA should apply some of these special management techniques to mega sites, as follows.

First, the Agency should ensure that the project managers assigned to mega sites have the appropriate experience and expertise to manage that type and level of project. The challenges associated with managing a large, complex, expensive, multi-year project are significant; mega sites require project management that has the appropriate training and capacity. The most important set of skills for a mega site project manager are management skills – technical, financial and other types of expertise can be brought to bear by other professionals who support the project manager.

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Second, EPA should surround project managers with the support systems that they need. Mega site project managers will need access to specialized expertise to assist them in overseeing a complex, expensive, multi-year cleanup. In particular, experts in technical disciplines relevant to the site in question and experts in practices such as cost engineering and multi-year funding will be needed. The Subcommittee emphasizes in particular the potential usefulness of cost engineering, a practice commonly used in the private sector and by other government agencies, including the Department of Energy and the military. The focus of cost engineering is use the right tools, systems, and training to develop credible cost estimates and life cycle costs to assist in decision-making for large, complex projects. Benefits can include increased accuracy of costs estimates, improved accountability, and improved management.

Third, the Agency must apply sustained management attention to large, complex sites. While there is potential for these sites to consume a large amount of human resources, as well as financial resources, it is important to keep strong management attention focused on them to ensure that cleanup occurs at a predictable and steady pace.

Finally, EPA should create specific centers of excellence that possess an understanding of the common characteristics of expensive sites, so that project managers can learn from and support one another.

Care should be taken not to interpret this recommendation as a call for a different technical process or cleanup standards for mega sites,. This recommendation calls for improving EPA's management of the cleanup process – not changing cleanup outcomes.

Recommendation 16: EPA should establish a more thorough site assessment process making NPL listing decisions or other programmatic commitments. Guidance on how to carry out these more thorough site assessments should be developed to ensure consistency of use across regions.

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Cleanup of a large, complex site represents a considerable resource commitment by EPA. This is obviously the case for fund-lead sites, but it is also true for PRP-funded cleanups, where the resources involved in EPA management and oversight of the cleanup process can be significant. Given the level of commitment that is needed for large, complex sites, it is important that actual site-specific conditions, rather than default assumptions, drive decision-making. Additional up-front investments in an enhanced site assessment will pay important dividends in helping to identify and prioritize among large, complex sites. In particular, enhanced site assessments could be used to:

- Supplement existing data to allow HRS scoring to rely more heavily on evaluation of site-specific conditions (see recommendation ____, on HRS scoring, earlier in this report).
- Involve states, tribal nations, affected communities, potentially responsible parties, and other appropriate individuals or groups earlier and more completely in the decision-making process, by reaching out to these individuals to share and solicit information (see recommendation ____ on early involvement, earlier in this report).
- Gather information on sources and distribution of contamination that could be used by EPA in its consideration of how to define site boundaries at listing (see recommendation ____ on defining site boundaries, below).
- Gather information on, and reach out to, other programs that may have independent missions / activities that could have a positive or negative affect on the Superfund cleanup, and develop plans to capitalize on potential positive affects (e.g., opportunities to leverage funding) and avoid negative affects (see recommendation ____ on leveraging other programs, earlier in this report).
- Identify potential redevelopment opportunities that could, if pursued and integrated into cleanup early, provide additional focus and funding to the cleanup.
- Aid in setting priorities after listing.

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While these considerations are important at every Superfund site, they are especially important at large, complex sites because of the special challenges these sites pose and the significant effects decision-making about such sites can have on the overall operation of the Superfund program.

Current EPA guidance discusses expanded site assessments – defined as Expanded Site Inspections/Remedial Investigations (ESI/RI). An ESI/RI can be used to gather site characterization data common to SI and RI activities in one step, thereby expediting the later collection of data when comprehensive RI activities are performed. ESI/RIs facilitate, but do not replace additional investigations that might occur if / when a site is listed. Because of the level of effort involved, in general, ESI/RIs are recommended only for sites where EPA feels it is moving towards a decision to list. EPA should consider an ESI/RI assessment for all large, complex sites that likely will result in an HRS score of 28.5 or above, before such sites are proposed for listing on the NPL. Further, the Agency should develop guidance on carrying out these assessments appropriately given the special challenges related to large, complex sites. At a minimum, guidance should address the potential uses of an expanded site assessment for large, complex sites listed above.

It is important to note that these recommendations should not be interpreted as a constraint on EPA's discretion to make listing decisions. There may be instances where a large, complex site appropriately could be listed without an ESI/RI; if the agency has information causing it to decide that a site should be listed without an integrated ESI/RI, it should go forward with listing without delay.

Recommendation 17: EPA should review with care its approach to large geographic

> Contamination is discontinuously distributed such that significant "hotspot" locations are interspersed with large areas of less significant contamination.

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> Multiple sources of contamination are present, with different sources being

> Some of the contaminant sources are associated with particular hotspot areas that are geographically distinct and appear unrelated to other hotspot areas.

With respect to these areas, EPA should evaluate whether the geographic area under consideration might more effectively and efficiently be addressed in smaller units tied more directly to particular contaminant sources and hotspot areas.

At some sites, coverage of a large geographic area can potentially result in exponentially increased transaction costs as contaminant areas are addressed as part of the same “site” when the contamination is largely from different sources at different locations that have created relatively distinct hotspots. In general, as described in the language of the recommendation, this may be the case at sites where:

1. Contamination is discontinuously distributed such that significant “hotspot” locations are interspersed with large areas of less significant contamination.
2. Multiple sources of contamination are present, with different sources being present in different portions of the geographic area.
3. Some of the contaminant sources are associated with particular hotspot areas that are geographically distinct and appear unrelated to other hotspot areas.

Although the number of such areas currently on the NPL is very small, and is largely limited to aquatic sites that cover entire urban embayments and industrial waterways, the risk of process-related costs ballooning at these sites is high, as is the risk of protracted timelines to actually get to remediation.

As Superfund continues to address additional large sites, particularly urban embayments and industrial waterways, the agency should take into consideration the option of addressing these large areas in smaller units more directly related to particular hotspots

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1 and particular hazardous substance releases. This approach should be considered both
2 *prior* to listing, when defining sites in the first instance, and after listing, when
3 designating operable units.

4
5 With respect to considerations prior to listing, EPA should take into account the
6 following factors:

- 7
8 ▪ Listing of a large geographic area, particularly in a populated area, inherently
9 brings in a large number of parties and generates high transaction costs; these
10 costs should be weighted against the benefits of listing an entire area, particularly
11 where EPA would, after listing, most often divide the area into discrete operable
12 units.
- 13 ▪ There may be economies of scale and consistency gains that could be realized by
14 listing a large geographic area with discontinuous contamination as a single NPL
15 site. These potential gains should be balanced against the prospect of employing
16 the more streamlined approach that may be possible by focusing on a smaller area
17 or cluster of hotspots through either a separate NPL listing, a removal action
18 without NPL listing, or use of a non-CERCLA program to address a portion of the
19 overall geographic area of concern.
- 20 ▪ Listing one large geographic area provides local communities with a unified basis
21 for participation in the evaluation and cleanup of all the contaminant hotspots in
22 an area. Listing the entire area also brings into play the public involvement
23 advantages that come with a Superfund listing, including technical assistance
24 grants to local communities. These factors should be weighed along with
25 potential efficiency gains (and simplicity for the community) from more directly
26 addressing individual hotspots and clusters of hotspots within the area.

27
28 With respect to dividing sites into operable units after listing, in addition to the
29 considerations above, EPA should also guard against the inappropriate balkanization of
30 sites into numerous small operable units, particularly at sites where there are multiple

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PRPs, because dividing sites into numerous sub-units may make allocations more difficult and delay cleanup.

Recommendation18: EPA should establish focused coordinating committees to serve

As described earlier in this report (see Section III, Use of the NPL), the Subcommittee had extensive discussions about the use of other programs at NPL-caliber sites and the roles of various interested parties in bringing forward information for EPA to consider when making NPL listing decisions. In general, the Subcommittee's views on the need for coordination with other programs and interested parties during NPL listing and related recommendations are described in Section III of this report; for large, complex sites, the Subcommittee believes that a more formal, standardized approach to assure coordination is warranted.

The Subcommittee had extensive discussions about the exact form that this more formal, standardized approach should take, and, in the end, there was a diversity of views about both the "level" at which a coordinating committee should operate and about the individuals that should be involved in a committee.

With respect to the level at which a coordinating committee should operate, some Subcommittee members favored a regional coordinating committee approach. These Subcommittee members assert that individuals in regional offices have the most in depth knowledge about sites- and regional-specific circumstances and are therefore most effectively positioned to offer relevant information on large, complex sites. Other Subcommittee members favored a national-level committee, asserting that national-level attention and leadership are necessary to improve EPA's handling of large, complex sites.

With respect to the make-up of a coordinating committee, Subcommittee members also did not agree. Some Subcommittee members supported including officials from non-EPA (and non-state) programs on Subcommittees, such as officials from the U.S. Corps

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of Engineers and the Office of Surface Mining Reclamation. Other Subcommittee members thought that participation in a coordinating committee should be limited to only officials from EPA, state environmental programs, and tribal nations and officials from other programs should be involved in a similar way as PRPs, site neighbors, and other affected parties.

Despite these disagreements, Subcommittee members did reach consensus on both the need for increased, formalized coordination on large, complex sites and on a number of goals for the coordination effort, as follows.

- Officials on a coordinating committee should work together to evaluate large, complex sites and to share and solicit information from other interested parties in a way that enables EPA to make more fully informed listing decisions.
- Committee(s) should evaluate the challenges and opportunities presented by large complex sites, ensure that other cleanup programs and funding are appropriately considered, and should provide a forum for information sharing between EPA, tribal nations, states, officials from other programs, PRPs, site neighbors, and other affected parties.
- Committee(s) should carry out their discussions in a transparent way, and provide opportunities for involvement by officials from other programs (if they are not represented on the committee), PRPs, site neighbors, affected communities, and other interested individuals, by reaching out to these groups to share and solicit information.
- Care should be taken in chartering coordinating committees so as not to create any constraint on EPA's discretion to make NPL listing decisions. EPA alone is responsible for listing decisions, and has a responsibility to make such decisions in a timely and efficient way in light of credible site-specific data.

V. Measuring Program Progress

The Subcommittee was charged with developing recommendations to EPA on better ways to measure program performance. For this particular issue, EPA did not pose specific questions to the Subcommittee. Rather, the Subcommittee was asked to provide feedback on new measures that are under development by the Agency. In addition to providing this interim assistance, the Subcommittee developed recommendations on how the Superfund program can improve the way it captures and communicates performance on a national and site-specific level. These ideas are presented in this section as recommendations, guidelines for implementation and policy considerations. In some cases, the Subcommittee members had divergent views about what should be measured, how it should be measures and for what purpose. As a result, a range of views are described in addition to the consensus recommendations. This section 1) provides background and context for its opinions about measuring the program's performance, 2) presents a primary set of goals upon which to measure the overall program at a national level, 3) describes additional measures of performance that indicate how the program is working and 4) addresses additional factors of program quality that are critical to the programs performance and have historically received inadequate attention.

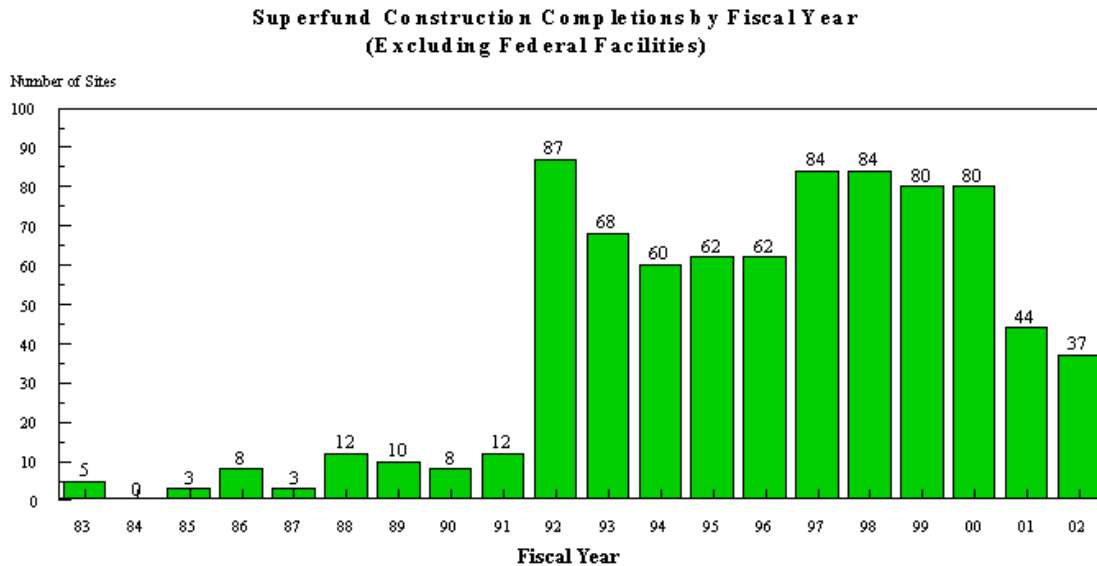
Background and Context

The discussion of measuring the Superfund Program's progress needs to be linked to the purpose and goals of the program. In 1980, Congress passed CERCLA to increase Federal authority to respond to releases of threatened releases of hazardous substances that may endanger public health or welfare and the environment. Thus, attempts to measure the progress being achieved by EPA through the Superfund Program should include metrics that help to assess the level of protection of human health and the environment being accomplished by the Program.

In recent history, the key measure of progress for sites on the NPL has been the number of "construction completions" each year. EPA's definition of what it means for a site to

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be construction complete is as follows: a site at which the physical construction of all cleanup action is complete, all immediate threats have been addressed, and all long-term threats are under control. Figure X (provided by EPA, 5/29/03) below summarizes the number of construction completions of non-federal sites by year.



The use of construction complete dates to measure site progress provides an important indicator of the changes in a site's physical condition and reflects progress in implementation of the remedy. It is an important primary indicator for public reporting because it is factual and straightforward. However, construction complete measures only the end of the physical construction and does not provide any information regarding the rate of progress at the site or national level at any given time. Cleanup progress is not complete until cleanup levels are met. At some sites, such as those with groundwater contamination, that can be years after construction is actually completed.

As stated in the Charge to the Subcommittee and discussed by its members, there are numerous limitations to using construction completion as the primary measure of program progress. For example:

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- 1 1. Such a milestone reflects the outcome of only the construction phase and does not
- 2 account for years of analysis and cleanup work, interim progress or O&M at NPL
- 3 sites.
- 4 2. Construction completion neither measures nor characterizes the impacts of
- 5 cleanup efforts on human health and the environment.
- 6 3. Construction complete creates an incentive to complete the easiest sites first to
- 7 meet annual performance goals, which may not be the most important sites to
- 8 address.
- 9 4. Construction completions do not correlate with milestones for non-NPL cleanups
- 10 or efforts at other hazardous waste cleanups. A lack of consistent metrics that
- 11 capture outcomes among the cleanup programs impedes the Agency's ability to
- 12 communicate work at NPL sites to the public, Congress, States, and the regulated
- 13 community.
- 14 5. Many sites have more than one operable unit, and all go through a number of
- 15 evaluations of and modifications to physical condition to protect the surrounding
- 16 population and environment. The incremental progress made at individual OU's
- 17 is not reflected in a single, site-wide metric.
- 18 6. Increasing degrees of human health and environmental protection obtained at
- 19 different stages of cleanup are not captured in construction completion. The
- 20 progress of the program could be better understood if protection were tracked
- 21 through a broader range of measures reflecting incremental progress.
- 22 7. There is no reflection of the complexity and cost of the respective sites reflected
- 23 in the numbers of construction completes. A half a million dollar site is
- 24 compared equally with a half a billion dollar site

25

26 The number of construction completes has varied over time, reflecting changes in

27 administrative emphasis on this milestone, size and complexity of sites in response action

28 in any given year, and the result of declining new listings. The spikes and dips reflected

29 in figure X do not correspond to shifts in the progress or spending of the overall program.

30 For example, the 1991 -92 spike from 12 to 87 construction completes is considered an

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1 artifact of an administrative and accounting function. The sudden increase is attributed to
2 the formalization of the definition of the term construction complete. As a result, the
3 agency was able to identify many cases where a small amount of work could result in the
4 bringing a site construction effort to complete thus allowing it to be “counted.”

5
6 **Focusing on Measures to Supplement “Construction Complete”**

7 The Subcommittee focused its efforts on the question of how the Superfund program can
8 improve the way it captures and communicates performance on a national and site-
9 specific level by exploring measures that would supplement “construction complete” and
10 would more comprehensively reflect significant milestones in protecting human health
11 and the environment at Superfund sites. While the original charge asked the
12 Subcommittee to think about measures for all contaminated sites, the Subcommittee
13 chose to focus on NPL sites, though some of the recommendations may have relevance to
14 other cleanup programs.

15
16 Through the course of its evaluation of current Agency efforts, the Subcommittee
17 concluded that EPA is making significant improvements in their mechanisms for
18 comprehensively measuring the effectiveness of the program on a national and site-
19 specific level (although some of the new measures have not yet been adopted). The
20 direction of these efforts is largely consistent with EPA’s current reporting under RCRA,
21 they address the limitations of construction complete addressed above and they represent
22 broad, straightforward and factual characterizations of progress in the remedial program.
23 It is important to note that they do not measure environmental outcomes in the direct way
24 possible in the Clean Air and Clean Water programs, but Superfund’s site-specific nature
25 and complexity makes the development and applicability of such measures extremely
26 difficult, if not impossible. For this reason, the Subcommittee supports the national
27 measures that EPA has developed, but further recommends that the Agency develop input
28 and activity measures to more thoroughly communicate Superfund’s breadth and impact.

29
30 **Understanding the Significance of Various Types of Measures**

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1 The Subcommittee discussed the significance of the many possible types of measures of
2 performance for the Superfund program. For example, there are measures that relate to
3 progress cleaning up NPL sites (e.g. reducing hazards) versus measures that relate to
4 overall program performance (e.g. efficient use of resources), and measures that relate to
5 program management (e.g. coordination with the public, tribes, state and local
6 governments). Different measures are required for different purposes. The measure
7 needs to be meaningful to the program manager, member of Congress, regulator,
8 stakeholder or other party using it. Performance measures for the Superfund program
9 should inform the decision making process and those responsible for and affected by the
10 process.

11
12 The Subcommittee discussed the importance of applying measures to Superfund that
13 would address critical aspects of a well functioning and effective federal program. These
14 other goals include: (1) budget transparency – that is, how are dollars actually being used
15 in the Superfund program, and (2) general program tracking – assuring that needed
16 information about the program is reliable and readily accessible. A number of areas, such
17 as: site activities, site risks, contamination, costs (to EPA, PRPs, and states), and remedy
18 effectiveness, among other areas, are not adequately and accurately captured in current
19 EPA data systems. Suggestions about data and program tracking are also discussed in the
20 NPL section of the report with respect to the development of an annual report.

21
22 The Subcommittee discussed the value of qualitative and quantitative measures.
23 Historically, reporting has been biased in favor of quantitative measures because they are
24 perceived as easier to count and easier to report. Critics claim this tendency for “bean
25 counting” offers clear numbers but these numbers do not accurately represent a complex
26 program. The Subcommittee discussed the need for qualitative measures in order to
27 better understand and set the context for quantitative measures. They also recognized
28 that the agency is in the process of developing more sophisticated means of collecting
29 quantitative and qualitative data that in combination would allow for more
30 comprehensive reporting.

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1
2 The Subcommittee also recognized the respective value of and need for both outcome
3 and output measures. Outcomes are an assessment of the results of a program activity
4 compared to its intended purpose. Outputs are a tabulation, calculation, or recording of
5 activity or effort expressed in a quantitative or qualitative manner. Performance
6 measures may address the type or level of program activities conducted (process), the
7 direct products and services delivered by the program (outputs), and/or the results of
8 those products or services (outcomes). While there is an effort throughout the federal
9 government to move away from outputs that measure “things” in favor of outcome
10 measures that reflect a relative direction or accomplishment, the Subcommittee felt that
11 both outcome and output measures of performance are necessary to comprehensively
12 track progress at Superfund sites and, on a national level, for the Superfund Program.

13
14 The Subcommittee also discussed the secondary impacts that will result from the
15 institutionalization of any measures of performance. In addition to the explicit and
16 primary goal of accounting for the accomplishments of the program, measures drive both
17 behavior and expectations. Therefore, it is important to consider the (potentially
18 unintended) behavior modification that is likely to result from the institutionalization of a
19 specific performance measure. For example, if construction completions were reported
20 as a percentage of the NPL rather than a total number, there may be a disincentive to list
21 new sites. Finally, it is important to consider the influence that measures will have on the
22 expectations and resulting degree of satisfaction of interested parties, including
23 communities, Congress, EPA managers, etc.

24
25 The Subcommittee emphasized the need to be clear about the purpose of the measure and
26 carefully consider the type of measure that best addresses that purpose. In this section of
27 the report, the Subcommittee has attempted to address a variety of types of measures and
28 clearly articulate their opinion of the appropriate use of those measures. However, the
29 Subcommittee recognizes that developing suitable measures of performance is complex
30 and that such measures will most effectively evolve over time through an iterative

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process. The recommendations herein are not intended to be prescriptive. Ultimately EPA will need to make additional decisions about the appropriate application of these measures. Once applied, the measures will influence behaviors. One can not necessarily predict how. Therefore, the agency will need to monitor whether they work as intended and modify them if they do not.

Three Types of Measures Frame the Subcommittee's Recommendations

The Subcommittee framed its recommendations for Measuring Program Progress around three types of measures:

- Primary national measures for the overall program used for reporting at a national level,
- Additional measures of performance that indicate how the program is working
- Additional measures of program quality that are critical to performance and have historically received inadequate attention.

Primary National Measures are the “macro” measures of performance. They are overall program level factors for which goals, objectives and targets could be set and for which consequences could flow based on whether or not the targets are hit. For example: how senior managers in the program would be evaluated; how funding gets allocated within the program and potentially impacting program funding appropriations.

Additional measures of performance are also measurable reflections of the programs progress but they generally would not be appropriate as “external targets” against which Congress or oversight agencies would pass official judgment on the performance of the program. These additional measures of performance would be used to inform decision making and document significant milestones at a variety of levels and could be “packaged” in a variety of ways to meet the needs of the intended audience. Such additional measures can be reported at the program level, at the Regional level, for a given state, for a given Congressional district or at the site-specific level. They may be

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1 used to evaluate progress at a sites or the level of the national program. While these
2 would not have GPRA-targets, they will still be very significant.

3
4 *Additional measures of program quality* have been developed by the Subcommittee to
5 highlight a set of critical program elements that have historically received inadequate
6 attention. These are management-level measures that are considered to be very
7 important elements of a successful project and when rolled up to include multiple sites,
8 can be used to reflect the progress of the overall program. The Subcommittee has chosen
9 to focus on issues associated with how the affected Tribal nations, communities and state
10 and local institutions are integrated in the decision-making process, and the degree to
11 which their participation has been meaningful. Generally, these measures have been
12 difficult to quantify. Out of all of the elements of a successful program that are
13 important, the Subcommittee chose this issue as a particular focus. Their goal in doing so
14 is to underscore the need to integrate these critical elements into the “back end”
15 measurements in order to encourage implementation of the “front end” guidance that has
16 been developed by the Agency.

17
18 Throughout these three sections, the term “measures” is used to define factors associated
19 with the performance of the Superfund program. The purpose of developing these
20 measures is to inform and improve the way that the Superfund program reports for its
21 accomplishments in a variety of forums. Depending on the intended use, these measures
22 may need to be translated into specific goals, objectives, sub-objectives, or targets.
23 Extensive guidance exists for developing such goals, objectives, etc. For the purpose of
24 this report, the Subcommittee has chosen to focus its recommendations on measures and
25 will rely on the agency to “package” the suggested measures for the appropriate
26 application for the purpose of tracking and translating these measures in terms that
27 meaningfully reflect the accomplishments of the program.

Primary National Measures

The Superfund program is required to report its progress to Congress, OMB, and a variety of external stakeholders for a variety of purposes. For this application, EPA's measures need to be simple, meaningful, and brief. In order to meaningfully represent the program, national measures should address both exposure reduction and pipeline progress. The Subcommittee developed a detailed list of candidate national measures. However, they agreed that, for such a list to be meaningful for the intended purposes at the national program level, it was too long. Therefore many of the suggestions were moved to a "second tier" and are included in the additional measures of program performance. The recommended list of primary national measures is as follows:

Exposure Reduction Measures

- Groundwater contamination under control
- Human exposure under control
- Sensitive environments protected.
- Number of sites where all cleanup goals have been achieved

Pipeline Progress Measures

- Number of constructions complete at the site level (the current measure)
- Number of constructions complete at the OU level (with a brief statement of caution as explained below)
- Number of sites delisted

The Subcommittee suggests that these primary national measures in combination reflect the significant elements of the program's progress and accomplishments. Therefore, they recommend the following:

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20. EPA should integrate the Priority National Measures into its national level Results Act (GPRA) goals, the goals developed in EPA's Strategic Plan, EPA's Annual Performance Goals developed for the Annual Performance Plan, OMB performance measurement efforts and the cross-program measures for the One Cleanup Program.

The Subcommittee recognizes that the agency is already reporting against some of these measures and supports such efforts.

Additional Considerations

Regarding the inclusion of "delisting" as a national measure, at one point in the history of the program, the delisting of sites may have seemed like a remote possibility, and therefore not a good measure against which the program should be judged. Members of the Subcommittee felt that the program has progressed to the point that it is reasonable, appropriate, and important to add "delisting" to the list of primary measures.

Regarding "sensitive environments under control," the Subcommittee members agreed that this measure reflected an important element of goals of the Superfund program. However, members disagreed about the measurability of this criterion.

Regarding the reporting of constructions complete at the OU level, the Subcommittee recognizes that the definition of UO is inconsistent. Some sites have a few very complex OU's and some have many less-complex OU's. Such a measure may unintentionally encourage site managers to create more OU's per site in order to be able to claim more "progress." Notwithstanding these concerns, most of the Subcommittee members felt that the benefits of such a measure would outweigh the detriments and recommend including it as a primary national measure.

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1 Similarly, some sites are much more complicated than other sites. Some subcommittee
2 members raised concerns about accounting equally for very large complex and costly
3 sites as you would for small and straightforward sites. However, some members pointed
4 out that small sites can be some of the most complicated. One option suggested was to
5 distinguish progress on mega sites from other sites in order to more accurately reflect the
6 significance of those accomplishments and acknowledge that those sites are expected to
7 take longer.

8
9 As was explained in more detail earlier in the report, a range of views exist among the
10 Subcommittee members regarding risk. This is also the case with respect to the
11 integration of risk factors into the measurement of program progress. Some members felt
12 that the critical factor in measuring program progress is reduction of risk to human health
13 and the environment at NPL sites. They felt that it was vitally important for the agency
14 to monitor and calibrate risk reduction using risk assessment techniques as the basis for
15 such a measure. Other members felt that assessing risk reduction for the purpose of
16 measuring the performance of the program was far too complex and difficult to report in
17 an objective way that accurately reflects the progress of the program. Furthermore,
18 critics of risk reduction measures argued that they have the potential to trigger unintended
19 consequences that outweigh the benefits.

20
21 **Additional Measures of Performance**

22
23 As explained above, additional measures of performance have been developed by the
24 Subcommittee in order to inform decision making and track progress at a variety of levels
25 of the program. They were developed with the goal of providing feedback to the agency
26 on how to more effectively document achievement of significant milestones,
27 communicate the performance and effectiveness of the Program to a variety of audiences
28 and create incentives for behaviors. This section includes a variety of the types of
29 measures described earlier in the section. For example, some reflect hazard reduction,
30 some reflect a standard for good program management, some reflect pipeline
31 performance, and some simply help to characterize the site. As is explained further

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below, the measures addressed here could be “packaged” in a variety of ways to meet the needs of a multitude of intended purposes and audiences. For the purpose of its deliberations, the Subcommittee focused on the “package” referred to as the national and site-level Performance Profile drafted by EPA. A mock-up of the Performance profile is included in Attachment G.

The Subcommittee believes that developing and systematically reporting against a core set of measures is critical to both accurately portray the progress of the program and communicate that progress to intended audiences. The Subcommittee therefore makes the following recommendation:

21. In order to report a core set of data for all NPL sites and Program activities

a Site Performance Profile and a National Performance Profile by integrating additional measures and modifying it for a variety of audiences and purposes.

The Subcommittee believes that the Agency should focus on assuring accurate reporting on this core set of data for all NPL sites. In the future, as its capacity increases, the program’s tracking system should be expanded to include other sites receiving Superfund funding and sites of Federal Concern. However, now and in the future, the Agency should distinguish the reporting of NPL sites from non-NPL sites (e.g. Superfund Alternatives and cleanups being implemented under other cleanup programs).

The Subcommittee recognizes that the Agency is developing improved performance measures in parallel with the efforts of the Subcommittee. At the April 29, 2003 meeting of the MPP work group, EPA staff presented the members with a mock-up of a “Site Performance Profile” for their review. The Profile is included in Attachment G. It reflected much of the feedback EPA received previously from the work group members on measures under development internal to the agency and on the conceptual discussions of the work group. The group supported the concept in draft and provided individual recommendations for additions and modifications. The Subcommittee as a whole

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1 recognized that the performance profiles are consistent with the goals they are
2 recommending and encourage EPA to continue with its efforts to improve upon the Site
3 Performance Profile and a National Performance Profile and begin tracking of such
4 measures immediately.

5
6 The Subcommittee recognizes the complexity of effectively developing and tracking
7 measures and suggests that the agency implement the effort as an iterative process with
8 mechanisms for making improvements as needed in the future. For example, measures
9 could undergo pilot testing and peer review by knowledgeable individuals and
10 organizations prior to widespread adoption. Additionally, the Subcommittee
11 recommends that the Agency extrapolate the site specific results to reflect regional and
12 national level progress and report the results on an annual basis so the information can
13 reflect incremental improvements. Additional details on the Subcommittee's position on
14 annual reporting is included in the NPL section, Recommendation 12.

15
16 The Subcommittee also supports the use of the core data set for other purposes discussed
17 with agency staff, including but not limited to: on-line, site specific reporting tools
18 accessible to the public; a 1-page "report-card" that would score a site and allow
19 comparisons among sites; longer "fact sheets" for site stakeholders looking for a
20 comprehensive overview of their site; etc. Different data sets may be appropriate for
21 different purposes. One of the benefits of reporting this data at the individual site level is
22 it comparisons to rates of progress at other sites. Members of the Subcommittee saw the
23 ability to compare across sites as a significant value for EPA managers, community
24 groups, Congress, and other stakeholder/watchdogs.

25
26 The intention of the Subcommittee is not to create an unwieldy data reporting and
27 tracking system. A critical assumption driving the Subcommittees support for increasing
28 the core set of data and encouraging a variety of application is the understanding that
29 such a system could be highly automated. The Subcommittee understands that the

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majority of the data could be efficiently downloaded from the existing tracking system and automatically reported in a variety of formats.

Measures for the Performance Profiles

Many Subcommittee members emphasized the value of limiting the data set to the most meaningful information and only that which can be reported in an easily readable format. However, since agency staff explained that the data could easily be translated into a variety of formats, the total number of measures was not artificially limited. Many of the Subcommittee members felt that additional data would be valuable to track. The Subcommittee recommends that the Agency add additional measures to the core set being tracked for which data currently exist and, in the future, add additional measures for which data does not currently exist. These items have not been addressed by the latest version of the Performance Profile developed by the Agency and should be added in order as appropriate to improve its effectiveness.

Measures for which data currently exists

- Site cost information [total cost to-date (EPA's data) and projected total (Both EPA & PRP data on past costs and projections of future costs if this is determined to be available for a sufficient number of sites to make reporting reliable). For example, cost spent on RA. Cost spent to get to construction complete, RA costs as a percentage of total costs, etc.]
- Community involvement indicator (Existence of a TAG - Y/N, Existence of a CAG – Y/N)
- Total number of Operable Units
- Performance Profile (report card) score from previous year
- Site cleanup lead (fund, PRP, mixed)
- Acre feet (or gallons) of restored water (specify amount restored for drinking water vs. cleaned up to pose no unacceptable risk to ecological receptors)

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- Acres of land returned to beneficial use (specify amount cleaned up for unrestricted use vs. cleaned up to pose no unacceptable risk to ecological receptors)
- Acres of sediment restored for beneficial use (unrestricted vs. safe for ecological receptors)

Measures for which data may not currently exists

- Consistent site type definitions (i.e. SIC codes)
- Current land use (private/commercial)
- Exposure pathways (e.g. ground water, soils, subsistence fishing, etc.)
- Human health risks under control
- Consistent definition of OU's and data relevant to them

Note: The Subcommittee recognized that EPA currently does not have the data to tack all of these measures (or they do not have consistent data to do so accurately). Therefore the Subcommittee recommends that EPA develop the capacity for collecting and tracking these data so that they can be reported in the future.

The Subcommittee recognizes that some of these measures (particularly health risk related) are very complex and handled without the help of medical experts to evaluate the risks on an individual or community basis. These measures will be difficult to develop if they are to be done well.

Recognizing that measures of performance drive decision making and expectations at the site and program level, the measures being utilized to evaluate the program need to be consistent with the management goals and priorities that are guiding the work being conducted. Similarly, the program measurements being recommended by the Subcommittee need to be consistent with the site listing and management recommendations being proposed by the Subcommittee. Many of the items

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recommended as additional measures to be added to the Performance Profile address the recommendations being made by the Subcommittee in other sections of the report. As was addressed in relation to the priority national measures, additional measures addressing mega sites may need to be distinguished from other sites in order to reflect the expectation that progress on such sites will likely take longer.

Additional Elements of Comprehensive Reporting

In addition to the aforementioned measures, the following information was identified by some members as potentially useful for reporting. They have been documented in the interest of furthering creative and innovative thinking around measuring program progress. Some of the information is not intended to document performance, but are elements of comprehensively characterizing a site or program:

- Risk Reduction Measures
- Remedy effectiveness measures
- The Hazard Ranking Score for the Site
- The date EPA expects construction to be complete
- Implementation of administrative reforms (e.g. orphan share funding, groundwater strategy, special account, land use, remedy review board, revisit remedies to update approach)
- Health risk under potential future use
- Ecological Risks
- Remedy failure - In addition to the 5-year review data that is currently included in the Performance Profile, additional data should be collected to report on the effectiveness of remedies relative to state and national cleanup standards and community expectations.
- Acres of land covered by operable units at a site
- Demographics information (race, ethnicity, income, etc.)
- Number of removal actions and population protected
- Number of Feasibility Studies completed number of Records of Decision signed.

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- Acres of land (now) available for industrial or other reuse and acres predicted to be available.
- Economic, recreational or environmental benefits derived from reuse.
- Number of sites or operable units at which risk based cleanup goals have been attained
- Use of resources from or cooperation with other cleanup programs
- Use of contract reforms

Additional Measures of Program Quality

As explained above, additional measures of program quality are being focused on in order to highlight a set of critical program elements that have historically received inadequate attention. The Subcommittee realizes that there are many important elements of successful project management and the success of the overall program. Generally, these have been more difficult to quantify. The Subcommittee has chosen to focus on issues associated with how the affected Tribal nations, communities and state and local institutions are integrated in the decision-making process, and the degree to which their participation has been meaningful. They have chosen this focus not because it is more important than any other elements, but because it is seen by many members as equally important and historically undervalued. Their goal in delving more deeply into this one issue in particular is to underscore the need to integrate these critical considerations into the “back end” measurements of the program in order to encourage implementation of the “front end” guidance that has been developed by the Agency.

Coordination with Tribal Nations, States and Communities

Some members of the Subcommittee believe that the Superfund Program cannot be considered a success at the national level if the affected communities do not think they have been informed, that their input has been used in addressing sites and that they have been treated fairly. Effective and efficient partnerships with all parties, including tribes,

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communities and states are critical to achieving the goals set forth in this Report to make good decisions around listing and management of NPL sites, leverage existing resources and share the burdens of site cleanups around the country. While effective coordination with other stakeholders, such as PRP's are also very important to the success of the program, these specific sets of interested and affected parties are being addressed in part because of the historical lack of effective coordination and emphasis on these parties. Two expert panels helped to inform the development of this section of the report. On January 7, 2003, in Washington DC a panel of Tribal representatives appeared before the Subcommittee and on June 18, 2003 in New Bedford, RI a panel of Environmental Justice Experts appeared before the Subcommittee. Their testimonies helped the Subcommittee to understand the concerns and complex challenges facing these underrepresented populations at NPL sites. ([The Subcommittee needs to consider whether states should also be highlighted given the new framing of this section.](#))

22. *EPA should develop measures of performance that assess the effectiveness of*

In recommending such measures, the goal of the Subcommittee is to 1) provide incentives for the Agency to implement the community engagement and Tribal/state coordination principles and goals reflected throughout this document and in Agency guidance, and 2) to underscore the importance of engaging Tribes, States and communities in the Superfund process to ensure effective, timely and efficient cleanups. By engaging a wide variety of perspectives in decision-making throughout the process, the Subcommittee believes that EPA will gain better understanding of the problems and issues posed by each site, and as a result have less likelihood of delay caused by last minute objections or new information from communities that would have better informed decision making. The Subcommittee recognizes that there are roles, authorities and jurisdictions unique to each of these parties and any proposed measures would supplement, document and encourage the appropriate coordination and involvement in decision making required by these established relationships.

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1
2 The communities impacted by the decisions made by Superfund are an integral part of the
3 decision making process at both the site and national levels. While EPA is implementing
4 this practice through various guidance documents and has done important work recently
5 in developing a collaborative model for work among communities, business and
6 government on specific projects, the practice remains uneven across the country.
7 Therefore, the Subcommittee believes it would be helpful to emphasize the importance of
8 meaningful Tribal, state and community participation by encouraging the agency to
9 measure the success related to such participation, and by more aggressively incorporating
10 the concept into the day to day management of the program. Recommendations related to
11 both of these approaches are included below.

12
13 Documents such as the recently released “*Public Involvement Policy*” (complete citation
14 will be added), “The Collaborative Model (complete citation will be added) and the
15 “*Model Plan for Public Participation*” (complete citation will be added) provide sound
16 guidance and reflect broad perspectives relevant to this issue. The Subcommittee
17 supports the direction of the Agency in developing and effectively implementing these
18 tools. The measures suggested by the Subcommittee are intended to reinforce and
19 highlight the importance of these policies.

20
21 Measuring the quality of engagement is inherently difficult. Many traditional measures
22 of public involvement have historically focused on formal “notice and comment” type
23 requirements that represented nothing more than “checking a box.” Such measures can
24 be useful in ensuring that certain activities and contacts are made, and the Subcommittee
25 continues this tradition to some extent with some of its recommendations aimed at
26 implementing existing guidance. However, this “check list” approach does not illuminate
27 the question of whether the engagement is meaningful or merely perfunctory. Yet, clearly
28 there is a range in the impact, quality, or thoroughness of public participation and
29 institutional coordination and involvement achieved among sites. Doubtless there also is
30 considerable variation in the interest of various publics and institutions in the process,

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1 ranging from indifference at some places to intense concern or even opposition to agency
2 procedures, decisions, or actions.

3
4 It is important to understand that the Subcommittee does not intend for EPA to measure
5 the extent to which communities are wholly satisfied with remedy decisions.
6 Communities are not monolithic and may reflect as many different opinions regarding the
7 ideal remedy as there are participants at the table. Some of these views may be related to
8 issues other than the fundamental questions of protecting human health and the
9 environment (or cleanup levels and technologies?); for example, traffic disruption,
10 utilization of local work force, and end uses. Rather, the Subcommittee believes that
11 EPA should attempt to capture whether communities believe that a.) they have had an
12 opportunity to participate meaningfully in the remedy selection process, and that their
13 input was considered and incorporated generally as appropriate – even if every
14 participant did not get everything they wanted; and b.) The decisions reached will likely
15 prevent unacceptable risks to public health and the environment.

16
17 In the cases of Tribal nations and states, the Subcommittee believes that ROD
18 concurrence and a measure to indicate whether they “felt that EPA made a sincere effort
19 to cooperate/coordinate with you on the site” would be appropriate supplements to the
20 questions above in order to gain a more accurate measure of the effectiveness of EPA’s
21 relationships with those stakeholders.

22
23 While investing in these activities diverts resources from actual cleanup, some members
24 of the Subcommittee believe that investing the coordination with tribes communities and
25 states is integral to an adequate analysis of alternatives, and (similar to remedial design)
26 are necessary to ensure that remedies will be effective and implemented in an efficient
27 and timely manner, and may reduce the need to re-design or reopen remedies later.

28
29 **National Performance Measures versus Site Specific Evaluation Tools**

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1 Similar to the site-level and national-level performance profiles addressed in the previous
2 recommendation, the Subcommittee recommends that the effectiveness of the Agency's
3 engagement with Tribal Nations, States and communities be considered at multiple
4 levels. A national performance measure along with site-specific evaluation of the
5 agency's activities serve distinct and important purposes related to evaluation of program
6 success while simultaneously offering valuable management tools.

7
8 The Subcommittee discussed a number of potential metrics and approaches designed to
9 capture whether input from States, Tribes and communities were appropriately
10 considered by EPA. It was concluded, however, that none of these objective, measurable
11 approaches would yield unambiguous, useable data. As a result, the Subcommittee has
12 decided that direct questioning of target audiences is most likely to provide the
13 information sought. The Subcommittee acknowledges that the design of surveys (and
14 similar data collection tools) and implementation of these tools is a specialized discipline
15 that is not represented among its members, and therefore does not believe it is qualified to
16 dictate the precise method and questions to be utilized by EPA; however, members
17 believe that the core issues that should be addressed by site-specific surveying with data
18 compiled at the national level are:

- 19
20 • Whether stakeholders believe they were offered sufficient opportunities to
21 provide meaningful input;
22 • Whether input provided was thoughtfully considered and incorporated as
23 appropriate, and;
24 • Whether stakeholders believe that human and environmental health have
25 been or will be protected by measures taken pursuant to the Superfund
26 program?

27
28 By asking these questions to representatives of impacted communities, tribes and states at
29 a site-specific level and averaging the results at the national level (similar to the site-level
30 and national-level performance profiles) such metrics could be used to measure overall

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1 program success and reflect incremental change or improvements. The Subcommittee
2 wishes to emphasize that the most meaningful interpretation of these results will be
3 comparative over the years. As EPA's outreach improves it should expect the responses
4 to these questions to be more favorable. Furthermore, by averaging results across
5 stakeholders by sites and ultimately by nation, the whole range of views will be
6 represented to provide general trends. The underlying data would need to be analyzed
7 more particularly to discover specific trends and perhaps areas or constituents in need of
8 improved communication.

9
10 Actual implementation of survey tools is likewise best left to experts. However, the
11 Subcommittee is aware of existing efforts to implement such surveys and offers the
12 following suggestions to improve the effectiveness of the efforts to date:

- 13
- 14 • The collection of such data should be made as easy and convenient as possible so
15 as not to create an unwieldy administrative burden on the program.
 - 16 • As possible, EPA should be collecting this kind of feedback through existing
17 forms, interviews, public meetings and other communication mechanisms and
18 tools as opposed to developing duplicative new tools for collecting data. Specific
19 examples of such tools are identified in the next section.
 - 20 • TAG recipients should be asked to provide answers to these core questions
21 (online options should be available) along with their other reporting duties
 - 22 • Community Advisory Groups (CAG's) should be asked to provide input
23 (recognizing that in most cases they are not receiving funds from EPA and may
24 have very limited resources)
 - 25 • Input should be sought, not only from the most active participants but from a
26 representative sampling of entire affected communities, including the local
27 governmental officials.
 - 28 • Care should be taken to distinguish feedback from residents most directly affected
29 by the contamination and decisions at the site

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- Data should be collected so as to enable separate analysis and reporting of results for mega sites, federal facilities, fund-lead versus PRP lead sites, TAG recipients, CAG members, immediate neighbors to facilities, and other categories as may be identified as distinguishable, as well as totals for the entire program.

Site-Level Measurements and Management Tools

In addition to its efforts to measure progress at the national level, the Subcommittee also recommends that the Agency provide incentives to implement existing community engagement and Tribal/state coordination guidance and policies by measuring the success of these efforts on a site-specific basis. For example, the Agency should maximize the use of the required community interviews and Community Involvement Plans by:

- Targeting key stakeholder audiences, including those identified in the NEJAC Model Plan (attachment G), and Natural Resource Trustees during the community interviews and community involvement plan design and implementation,
- Make community involvement and institutional coordination more integral to site management.
- Integrating community involvement and institutional coordination factors into reporting requirements.

Additionally, the Agency should increase its efforts to implement its site-level efforts underway, including but not limited to site-specific community effectiveness surveys, (“What Do You Think About EPA’s Community Involvement Efforts at X Site?” See Attachment G.); questionnaire templates that have been developed already for CAG’s, listening sessions, and public meetings; community interviews, etc. These tools are effective means of collecting valuable information about the effectiveness of the Program and have the potential to better inform decision making at the site and regional level. The Subcommittee recommends that the Agency:

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- Target the categories of stakeholders identified in the NEJAC Model Plan in the distribution of the various evaluation tools (a list is included in Attachment G.
- Take advantage of existing mechanisms for circulation, communication and collection of results from various tools to minimize additional expenditures. Hand delivery of survey forms should be considered.
- Aggressively apply the tools to mega sites in particular. Outreach may be more complex and expensive to administer at some of these sites due to the distribution of affected individuals over large geographical areas; however, the costs of bad decision-making, or delayed decision-making are likely to be higher at such sites as well.
- Prioritize outreach efforts at environmental justice communities.
- Perform surveys at more sites than (14) currently done, and do not limit surveys to sites at which Community Coordinators or Remedial Project Managers request them.
- Dedicate additional resources to survey administration, interpretation and distribution of results.
- The timing of such surveys should be carefully considered. It may be that feedback, especially from large, expensive sites, would be useful at least at the RI, FS and ROD stages. Inactive sites could provide valuable input.
- Respondents should have the opportunity to submit information anonymously.

EPA may also want to consider collecting information from PRP's and perhaps other sources to help in interpreting the data obtained and more accurately and comprehensively capture the nature of tribal, state and community engagement at the site. In particular, their perspectives regarding the responsiveness of the Program might be useful if supported with concrete examples of modifications made to decisions based on input received from communities and institutions.

The Subcommittee also recommends that the agency continue to invest in the development and implementation of tools for conducting, tracking and evaluating community and tribal involvement with a view toward increasing awareness throughout

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1 the agency of the value and benefits of the perspective. For example, the agency may
2 want to consider sensitivity training and environmental justice training for its regional
3 project managers.

4
5 Finally, the Subcommittee recommends that the Agency further explore the option of
6 engaging independent reviewers or outside consultants to evaluate the effectiveness of
7 Tribal, state and community coordination efforts.

VI. Other Issues Identified by the Subcommittee

During the Subcommittee's deliberations a number of issues were identified that did not receive in-depth focus and deliberation. In these cases either 1) the issue was seen as outside of the Subcommittee's scope, 2) the Subcommittee did not have enough time to investigate adequately, 3) the Subcommittee did not have the appropriate perspectives and expertise, or 4) the information was not available to address the issue thoroughly. However, preliminary consideration by the Subcommittee suggests that the issue merits further attention by EPA. These issues are identified in this section and observations or recommendations are made with the aforementioned qualifications in mind.

Agency for Toxic Substances and Disease Registry and National Institute of Environmental Health Sciences

During the Subcommittee's deliberations the relationships of both the Agency for Toxic Substances and Disease Registry (ATSDR) and the National Institute of Environmental Health Sciences (NIEHS) with the Superfund Program was initially raised in the context of analyzing the Superfund Budget. In the opinion of some of the Subcommittee members, the ties between these agencies and the Superfund program in terms of funding and the potential to impact site listing and management decisions justified additional inquiry into the potential to increase program efficiencies and effectiveness.

ATSDR Background

ATSDR was created in 1980 by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). As reported by ATSDR to the NACEPT Superfund Subcommittee (11/4/03 written correspondence via email "*NACEPTresponse-OPEA-2003-11-3-rev*"), ATSDR is the principal federal public health agency charged with evaluating the human health effects of exposure to hazardous substances. ATSDR's mission is to prevent exposure and adverse human health effects and diminished quality of life associated with exposure to hazardous substances from waste sites, unplanned

1 releases, and other sources of pollution present in the environment. ATSDR carries out its
2 mission through programs in: public health assessments, consultations and studies;
3 exposure and disease registries; toxicological profiles; applied research; health education
4 and communication; emergency response; and emergency events surveillance.

5
6 ATSDR evaluates the potential health impacts at hazardous substance sites or spills
7 through its public “health assessments” or “health consultations”. ATSDR health
8 assessments on sites include the following:

- 9
- 10 • an evaluation of the information available about site-specific contaminants,
 - 11 • a determination whether people might be exposed to environment hazards
 - 12 from the site,
 - 13 • a determination of what harm exposure to site contaminants might cause, and
 - 14 • Recommendations for actions to protect people’s health.
- 15

16 ATSDR and EPA respond to site-specific environmental concerns from private citizens,
17 and state and federal agencies for the purpose of determining if there is a completed
18 exposure pathway, if there have been prior exposures, and the possible health effects of
19 such exposures. Depending on the existence of or potential for exposures, ATSDR
20 recommends or performs appropriate prevention and follow-up health activities.

21 22 **NIEHS Background**

23 In 1966, the U.S. Surgeon General established the Division of Environmental Health
24 Sciences as a part of the National Institutes of Health. (1966). In 1986, under the
25 Superfund Amendments and Reauthorization Act (SARA), Congress established two
26 programs, the Superfund Basic Research and Training Program (SBRP) and the Worker
27 Education and Training Program (WETP), to be managed by the National Institute of
28 Environmental Health Sciences (NIEHS), within the National Institutes of Health
29 U.S.C. 9660. NIEHS provides funds to universities and non-profit institutions to

1 accomplish the goals of both these Programs. Currently, there are 19 SBRP grantees and
2 18 WETP grantees.

3
4 As reported by NIEHS to the NACEPT Superfund Subcommittee (09/5/03 written
5 correspondence via email "*NACEPT1.doc*"), the SBRP is a university-based program to
6 support basic research and training grants in the area of risk assessment. This research is
7 designed to address the wide array of scientific uncertainties facing the national
8 Superfund Program. The goal of supporting research in this area is to provide a better
9 understanding of contaminant toxicity issues so that emerging data can be integrated into
10 risk assessment and remediation decision making. The primary objective of the WETP
11 is to fund non-profit organizations to provide high quality training to workers who are
12 involved in handling hazardous substances or in responding to emergency releases of
13 hazardous materials.

14 15 **Overview**

16 Until 2001, ATSDR and the two programs under NIEHS received their funding as pass-
17 through monies from EPA. In 2001, Congress chose to appropriate the funds for these
18 two programs directly to the respective agencies. Even though the appropriations are no
19 longer tied to EPA's funding, it is the understanding of the Subcommittee that Congress
20 envisioned that the information generated and services performed by ATSDR and NIEHS
21 would contribute to the goal of appropriately identifying and cleaning up national priority
22 sites. Furthermore, the money previously appropriated to EPA for these agencies was
23 subtracted from the EPA budget for conducting Superfund activities. Given the budget
24 shortfalls currently facing the Superfund budget, and the emphasis placed on identifying
25 current human health threats posed by the releases of hazardous substances, it is
26 imperative to maximize the utility and effectiveness of the activities of these programs, in
27 particular ATSDR which was specifically created to focus on human health issues at
28 proposed and listed superfund sites. It is the experience of many of the members of the
29 Subcommittee that the mission of these agencies, with respect to their support for the
30 Superfund program, has not been fully realized.

1 In August of 2003, the Subcommittee sent to NIEHS and ATSDR a short list of
2 fundamental questions regarding the functioning of their programs. The purpose of this
3 exercise was to establish a common understanding of the responsibilities of the agencies
4 and the interrelationship between their efforts and those of the Superfund program. The
5 intention was to build upon that common understanding to identify strengths and
6 shortcomings in the existing program, and identify suggestions for EPA to improve the
7 relationship and maximize efficiencies with regard to interrelated activities. In response
8 to these requests, the Subcommittee received the written correspondences referenced
9 above. In addition, Dr. Falk, Assistant Administrator for ATSDR and Beth Anderson of
10 NIEHS participated in the November 4, 2003 meeting of the Subcommittee.

11
12 Given time constraints, the breadth of its charge from EPA, and the difficulty obtaining
13 the necessary information, the Subcommittee was not able to delve into these issues to
14 the degree that many members desired. With the limited information provided, along
15 with the direct experience of subcommittee members, the Subcommittee has identified a
16 number of preliminary recommendations for EPA related to the work of ATSDR and
17 NIEHS.

18
19 ***A: EPA should improve its cooperative relationship with ATSDR. EPA in***
20
21 ***communities, states and Tribal Nations to regularly identify on a site-specific and***
22 ***nation-wide basis, projects and research efforts that would be most helpful in***
23 ***determining adverse health effects posed by releases of hazardous substances, thereby***
24 ***informing decisions related to NPL listings, investigations, and remedy selection and***
25 ***implementation. EPA should include recommendations both in proactive suggestions***
26 ***for projects, and in reactive comments on ATSDR proposed projects. ATSDR's***
27 ***responsiveness to these recommendations should be included in EPA's (annual)***
28 ***reporting.***

1 A general perception among many stakeholders and, in particular, communities, is that
2 ATSDR is not adequately responsive, and its work products are not useful in
3 understanding adverse health effects and risks posed by hazardous substance releases.
4 However, it is generally felt that the duties assigned to the agency by the statute are
5 important functions. The Subcommittee was informed by Dr. Falk, that his agency has a
6 formal liaison with EPA, and tries to perform work projects where requested by EPA.
7 While coordination seems to take place at high levels between the agencies, it does not
8 appear to consistently or effectively influence decision making at the site level.

9
10 To better match the output of ATSDR with reasonable expectations and the needs of the
11 program and its Stakeholders, the Subcommittee would like to see EPA be more
12 proactive in targeting the research efforts of the ATSDR. For example, conducting in-
13 depth body burden studies of community members known to have the greatest exposure
14 to a release would likely provide far greater benefit to the community and EPA decision-
15 makers than a cursory summary of existing environmental and risk data for a site. Such
16 targeted biomarker studies could provide site-specific information more quickly, in time
17 to influence the early decisions that must be made for characterizing and managing sites.
18 This could save time, money, and reduce impacts on human health. Under ATSDR's
19 interpretation of CERCLA, either of these activities would satisfy its mandate to perform
20 a health assessment at each NPL site.

21
22 ***B: EPA should establish a transparent and cooperative relationship with NIEHS to***
23
24 ***efforts and findings of NIEHS. In so doing, EPA Site Managers and Community***
25 ***Involvement Coordinators should be educated as to the resources available from***
26 ***NIEHS (and ATSDR) and should always inform the community of these resources.***

27
28 The Subcommittee respects the role of NIEHS in performing basic research. However,
29 from the perspective of many stakeholders in the Superfund process, this role appears to
30 be divorced from the issues and needs of the Superfund program and its affected

1 stakeholders. EPA's views regarding useful research initiatives should be provided to
2 NIEHS in a meaningful way, and results of such research should be referenced in EPA's
3 [bi] annual report. If such involvement is already taking place, the process should be
4 made more transparent to affected stakeholders who may have an interest in providing
5 input and/or tracking the results. Such an effort is likely to result in broader application
6 of the research and decreased duplication of research and reporting efforts.

7
8 EPA is the agency with the most direct and continuous interaction with States, Tribes and
9 local communities. Therefore, they are in the best position to ensure that these
10 communities are informed regarding the potential available resources and health
11 information relevant to site cleanups. Health issues are frequently the issues of greatest
12 concern to affected communities. While NIEHS is primarily involved in basic research
13 and training, the studies they have funded speak to concerns at specific superfund sites.
14 A process to convey the NIEHS findings to the field is lacking and should be
15 implemented – especially to those communities with contaminants studied under NIEHS
16 funding.

17
18 ***C: EPA should convene a national dialogue on the role of ATSDR and NIEHS in the***
19

20
21 Specific decisions on the most useful activities to be performed at a site will need to be
22 made at a local level. However, ATSDR and NIEHS have several responsibilities that
23 relate to national issues, such as the compilation of Toxicological Profiles, the Disease
24 Registry, etc. For such national issues, and to better understand and define priorities, best
25 practices and lessons learned in performing site-specific studies, the Subcommittee
26 believes that EPA should obtain input from stakeholders; in particular, States, Tribes and
27 communities. This dialogue could take the form of a Federal Advisory Committee, or
28 series of workshops and meetings culminating in collaborative guidance or policy
29 statements as deemed appropriate by EPA. The findings and conclusions from this effort
30 would be incorporated into the proactive agenda-setting suggested above.

1 **D: EPA should Create Guidance for Declaring “Public Health Emergencies”**

2
3 During its deliberations, the Subcommittee identified a need for clarity around the
4 responsibilities and procedures for declaring public health emergencies. The
5 Subcommittee recommends that EPA, in cooperation with ATSDR create guidance that
6 describes: 1) the agency or agencies responsible for declaring “public health
7 emergencies” under CERCLA, including 42 U.S.C. § 104(i)(1)(D) and (E); and 2); the
8 criteria that an agency or agencies will use to declare such a public health emergency.
9 The guidance should also describe how and when the federal government intends to
10 implement its statutory duty under section 104(i)(1)(D) of CERCLA to, “in the case of
11 public health emergencies caused or believed to be caused by exposure to toxic
12 substances, provide medical care and testing to exposed individuals...”, and provide for
13 “admission to hospitals and other facilities and services operated or provided by the
14 Public Health Service” EPA and ATSDR should develop this guidance in an open and
15 transparent process that involves the representatives from the Department of Health and
16 Human Services, and the public and other stakeholders, including written public
17 comments.

18
19 **National Dialogue on Effective Community Involvement**

20
21 One of the measures of a successful cleanup program is the effectiveness of the
22 community involvement program. Though much has been written on community
23 involvement via agency guidance and other national policy dialogues, consensus
24 agreement on what constitutes community involvement does not exist. To that end, the
25 Subcommittee recommends the following:

26 ***E: EPA should convene a national dialogue under NACEPT to develop***

1 This will serve two main purposes:

- 2
- 3 1. By establishing consensus recommendations it will serve to clarify the role of the
- 4 community in the cleanup decision making process and streamline participants'
- 5 expectations. This will also alleviate the need to constantly re-visit the merit of
- 6 this issue.
- 7 2. It will provide EPA with solid recommendations to implement throughout all of
- 8 its programs and become a way to measure the effectiveness of cleanups.
- 9

10 **Institutional Controls and Long-Term Stewardship**

11

12 ***F: EPA should develop a system to track and evaluate the performance of institutional***

13

14

15 The tracking, implementation, and maintenance of institutional controls are critical at

16 many sites to assuring long-term protectiveness. There are many issues still to be

17 addressed regarding the use and enforcement of institutional controls, as well as

18 questions about how to assure that needed controls are in fact implemented and who will

19 pay for the on-going costs of institutional controls. The Subcommittee believes that these

20 issues are extremely important and should be a high priority for the Superfund program.

21 The Subcommittee further recognizes that there is a substantial effort underway at EPA,

22 to develop an institutional controls tracking system and supports the continued

23 investment in such an effort.

24

25

26

List of Figures

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2
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Glossary of Terms and Phrases

Appendices

[Review Note: Additional appendices will be added. Appendix materials will be reviewed by Subcommittee members prior to finalization of the report]

A. List of Subcommittee Members and Member Bios

B. Revised Charge to the Subcommittee

Original Charge to the Subcommittee

C. Description of Subcommittee process, including list of individuals who made presentations or comments to the Subcommittee

D. Supporting Documents for NPL Section

Law's memo

FFERDC document

E. Supporting Documents for Mega Sites Section

F. Installation Development/Contracting presentation

G. Supporting documents for Measuring Program Performance Section

Performance Profile

Community Satisfaction Survey